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The OIL WEEKLY

Exclusively Devoted To The Production and Transportation of Oil and Gas

Engineering News Statistics

May 16, 1930 **Volume 57. No. 9**

FOR sheer dependability at all times—in the most gruelling, practical tests, under the most adverse conditions, IDECO Steel Derricks have so conclusively proved their supremacy that they obviously are best for any drilling or pumping service.
They have *never* been successfully imitated.
IDECO
Domat

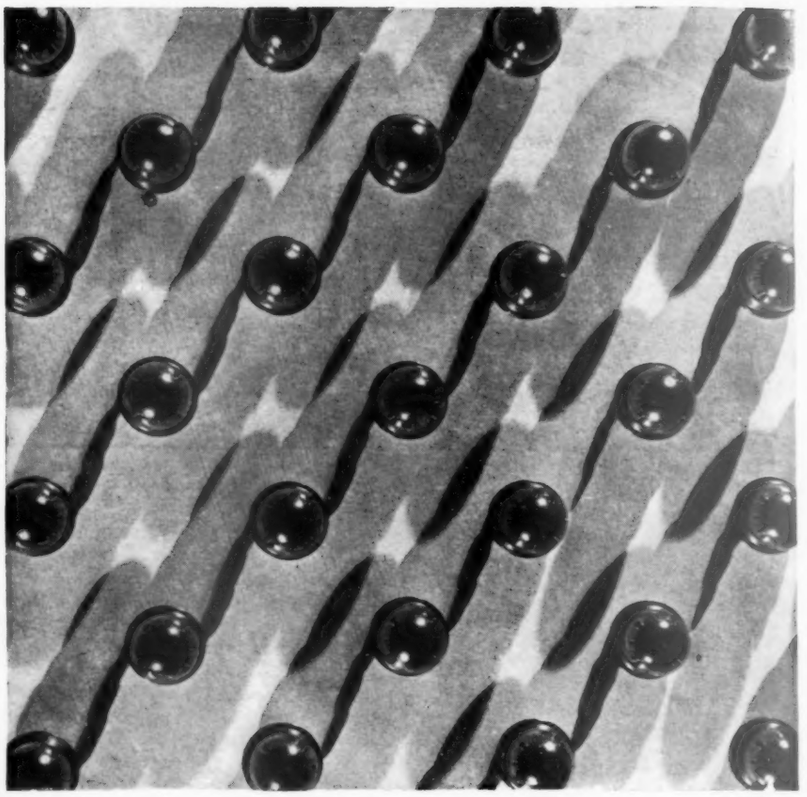
THE INTERNATIONAL DERRICK & EQUIPMENT CO.

Columbus, Ohio **Houston, Texas** **Los Angeles, Calif.**

Plants: Columbus, Delaware, Ohio; Torrance, California; Beaumont, Houston, Texas. *District Offices:* New York City, N. Y.; Pittsburgh, Pennsylvania; Wichita, Kansas; Tulsa, Oklahoma; Shreveport, Louisiana; Fort Worth, Beaumont, Texas; Maracaibo, Venezuela. *Warehouses and Stocks:* Columbus, Delaware, Ohio; Seminole, Tonkawa, Drumright, Okemah, Wewoka, Maud, Sasakwa, Allen, Oklahoma City, Oklahoma; El Dorado, Wichita Heights, McPherson, Kansas; Houston, Beaumont, Big Spring, Odessa, Pyote, Pampa, Borger, Mexia, Luling, Wichita Falls, Grand Saline, Seguin, Hebbronville, Texas; Lake Charles, Shreveport, Louisiana; Smackover, El Dorado, Arkansas; Bakersfield, Taft, Torrance, California.

Export Offices—74 Trinity Place, New York City; Columbus, Ohio; Houston, Texas; Los Angeles, California. 701

Receiving 854,000 impacts per month



THERE IS NO ECONOMICAL SUBSTITUTE FOR QUALITY
Copyright 1920

. . a good reason for AXLOY SEATS & BALLS

Strain imposed upon seats and balls is better comprehended by considering the number of impacts over a given time. If a well is pumping at 20 strokes per minute, which means that the working and standing valves are each subjected to one impact on the up-stroke and down-stroke, the ball in either valve delivers approximately 4800 separate blows on the seat during a 24-hour per day service. This amounts to 854,000 impacts per month.

Additional factors should be considered, including the contributing conditions of sand, gas, oil, water, weight of fluid column, abrasion action of the fluid, etc. The merit of Axloy Seats and Balls is fully appreciated, especially when runs of 6 months or more are invariably obtained. These seats and balls are made from rustless, seamless steel, and every surface is ground. Each ball is individually lapped to its seat. The product is highly resistant to abrasion and fatigue in any well.

A PRODUCT BY *Axelson*

Axelson Manufacturing Co., Ltd.
P. O. Box 337, Los Angeles
Tulsa St. Louis
New York City: 30 Church St.
Mid-Continent and Eastern Distributors
FRICK-REID SUPPLY CORPORATION

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IN the field of *transportation* nothing indicates progress more clearly than the time required for a message to travel from New York to Boston: In 1789, by coach, 7 *days*; in 1927, by air mail, *hours*.

In the field of *oil-industry pumps*, nothing indicates progress more clearly than a comparison of present-day models with those in use before GASO entered the field.

GASO Pumps are unmatched for oil-industry service because they are designed exclusively for oil-industry use. The GASO organization lives in the heart of the industry; knows the conditions under which the pumps must operate; concentrates its energies on the fulfillment of oil-industry needs.

Our 64-page catalog will be mailed on request.

GASO PUMP & BURNER MFG. CO.

Tulsa, Oklahoma
Fort Worth, Texas
New York, N. Y.

(Left) Gaso Fig. 1508 All Timken Bearing Pump. Interchangeable liners give capacities from 63 bbls. per hr. at 800 lbs. pressure to 250 bbls. at 250 lbs. Arranged for any type drive.

(Right) Gaso Pumping Unit with Fig 710 Pump and V-rope drive from Buda 85 H.P. Gas or Gasoline Engine. Capacities from 24 bbls. per hr. at 1400 lbs. pressure to 360 bbls. at 300 lbs.

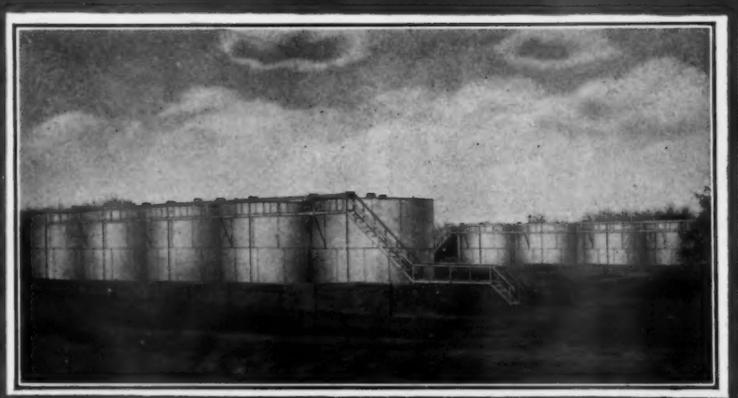
GASO PUMPS
for every oil industry need

For SAFETY — Specify COLUMBIAN

BOLTED TANKS—
—FLOATING DECKS

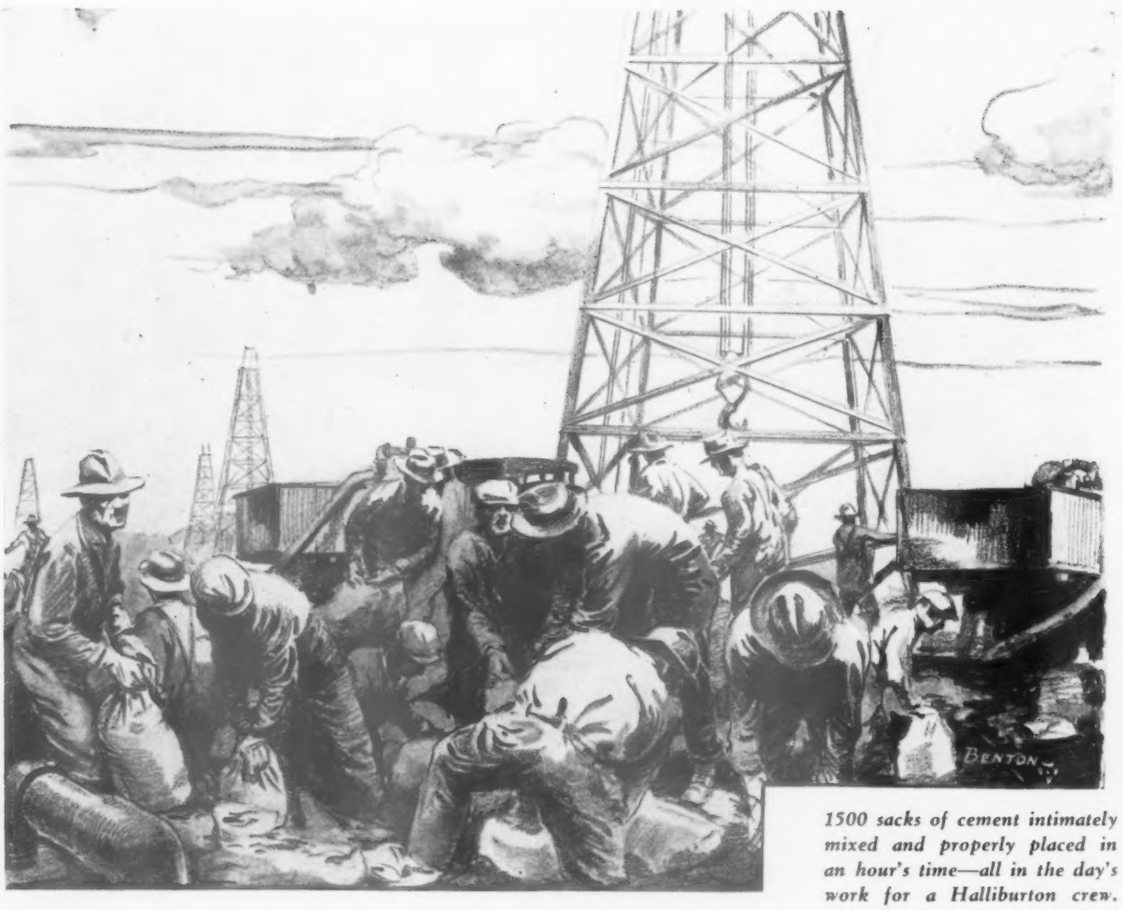
DESIGNED FROM EXPERIENCE . . . .
BUILT OF THE FINEST MATERIALS
. . . . BY MASTER CRAFTSMEN . . . .

FACTORS FOR SAFETY!



PIONEERS

COLUMBIAN STEEL TANK COMPANY
EST'D 1894
1405-1625 WEST 12TH STREET KANSAS CITY, MISSOURI



1500 sacks of cement intimately mixed and properly placed in an hour's time—all in the day's work for a Halliburton crew.

The Halliburton organization is not content to rest on past achievement. Day after day, engineers, chemists and mechanics are at work seeking to improve still further processes and methods which already represent the utmost in efficiency. Never for a moment does Halliburton lose sight of the obligation it assumed as universally acknowledged leader in its field.

HALLIBURTON
OIL WELL CEMENTING CO.
Duncan, Oklahoma

May we send you, without cost or obligation, our publication, THE CEMENTER? Issued periodically, it contains interesting oil field engineering news, spiced with a dash of humor. Your name and address is the subscription price.

Halliburton Oil Well Cementing Co., Dept. OW, Duncan, Okla.
Without cost or obligation, please place my name on the list to receive THE CEMENTER regularly as issued.

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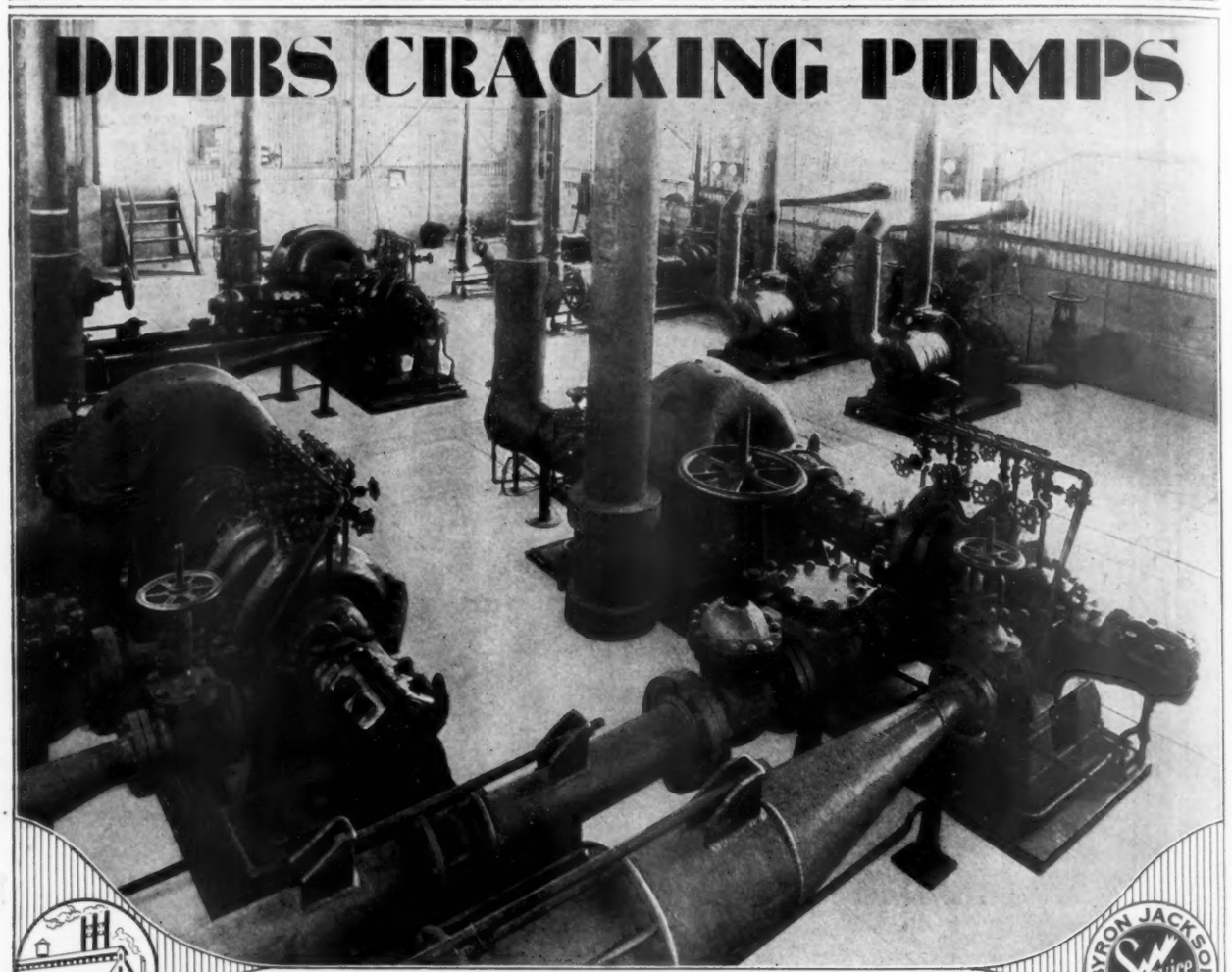
DUBBS CRACKING PUMPS



The three Byron Jackson Centrifugal Pumps in the foreground are used in conjunction with a Dubbs Cracking Still. Each is rated to deliver 450 g.p.m. of 1200 S.S.U. 16° A.P.I. oil at 120° F. against 300 pounds per square inch pressure. Other pumps used with the process are shown in the background direct connected to totally enclosed vapor-proof motors vented to the outside of the pump house. In addition this company manufactures a complete line of refinery, pipe line and water service pumps to meet every operating condition.

SINCE 1872

BYRON JACKSON CO.

Factories: BERKELEY, Los Angeles, Visalia, Calif.

Branches: NEW YORK and CHICAGO

San Francisco, Portland, Salt Lake, Tulsa, Dallas, Phoenix

BYRON JACKSON

CENTRIFUGAL PUMPS FOR EVERY SERVICE

Sturdier Smoother DRIVE

The Standardized Bearing of the Oil Industry

NO WEIGHT TOO GREAT
AMERICAN
HEAVY DUTY TYPE "C"

The remarkable progress made in heavy duty construction has been notably affected by the use of heavier duty roller bearings. The answer manufacturers are giving to the problems connected with deeper drilling, greater loads, higher safety factors, smoother operating qualities, sturdier types of construction have been characterized quite generally by the employment of American Bearings as a basic means of improvement.

Oil Well Supply Company furnishes the most recent illustration of this tendency by *standardizing* on American Bearings for their well known and popular 20-inch Imperial Rotary.

Cheaper bearings might do, but American Heavy Duty Bearings are certain to do, all the jobs this outfit encounters without in any way taxing the bearings. This Imperial drive is particularly assured long life by the ample strength represented in its *standardized heavy duty roller bearings of the oil industry.*

AMERICAN ROLLER BEARING CO.
PITTSBURGH, PENNA.

AMERICAN HEAVY DUTY ROLLER BEARINGS

4 TRUCK LOADS OF FITTINGS *in one Afternoon*

. . . that is the record of the JARECKI store at Oklahoma City—a record that proves more plainly than words that JARECKI is Fitting Headquarters in the oil industry. Here every fitting is sturdily designed, carefully made, cleanly threaded and thoroughly inspected. . . . You can't go wrong with such products.

Branch Stores at all important places in the Oil Country

Jarecki
MANUFACTURING COMPANY
Home Office and Factory—Erie, Pa., U. S. A.

General Office—St. Louis, Mo. *District Offices*—Pittsburgh, Pa.; El Dorado, Kan.; Tulsa, Okla.; Newark, Ohio; Eastland and Dallas, Texas; Lawrenceville, Ill.

ABILITY!

THE LAYNE

MILLED GROOVE SCREEN

Safely Stands

8000 Ft. of Drill Pipe

Sensational, record production! Remarkable, dependable strength! That is what you get in the exclusive Layne Milled Groove Screen, oil industry's latest, greatest, and most important invention.

In three months, more than half a million barrels of oil passed through one joint of Milled Groove Screen in the Kirby A-8 well at Barbers Hill, Texas. This screen increases production from 33-1/3% to 100%.

It has strength to safely stand the full weight of more than 8000 feet of drill pipe, having the ability (proven by Pittsburgh Testing Laboratory) to resist 102½ tons of pressure.

Layne Milled Groove Screen is a cushion against "cutting" high pressure, is a stimulation to low pressure, and avoids sand cutting.

Large and important companies the world over, users of the Layne Milled Groove Screen, will testify—which is ample proof—to this screen's outstanding superiority.

Install Layne Milled Groove Screen instead of wishing you had!

The Layne & Bowler Co.

Houston THE LAYNE **Texas**

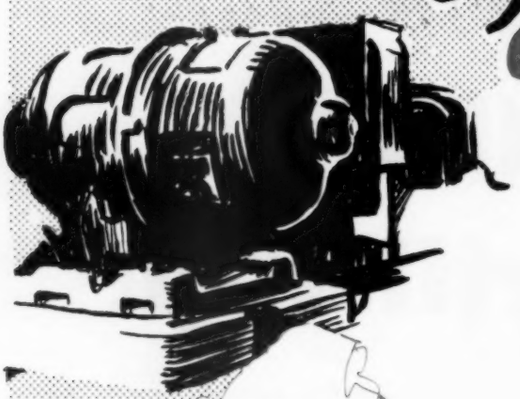
Increases Production

The Layne New York Co., 30 Church St., New York
The Layne & Bowler Corp., Los Angeles, Calif.
Vickers, Limited, London, England

A QUARTER CENTURY OF EXPERIENCE AND DEVELOPMENT

SERVING WEST TEXAS

by Electricity it costs ½ as much for pumping power and you get MORE oil out of old wells



—in both drilling and pumping, the largest oil production companies have proven the economy and efficiency of ELECTRIC POWER—some have even reported a saving of as much as two-thirds on pumping with increased production of more than 13% of oil.

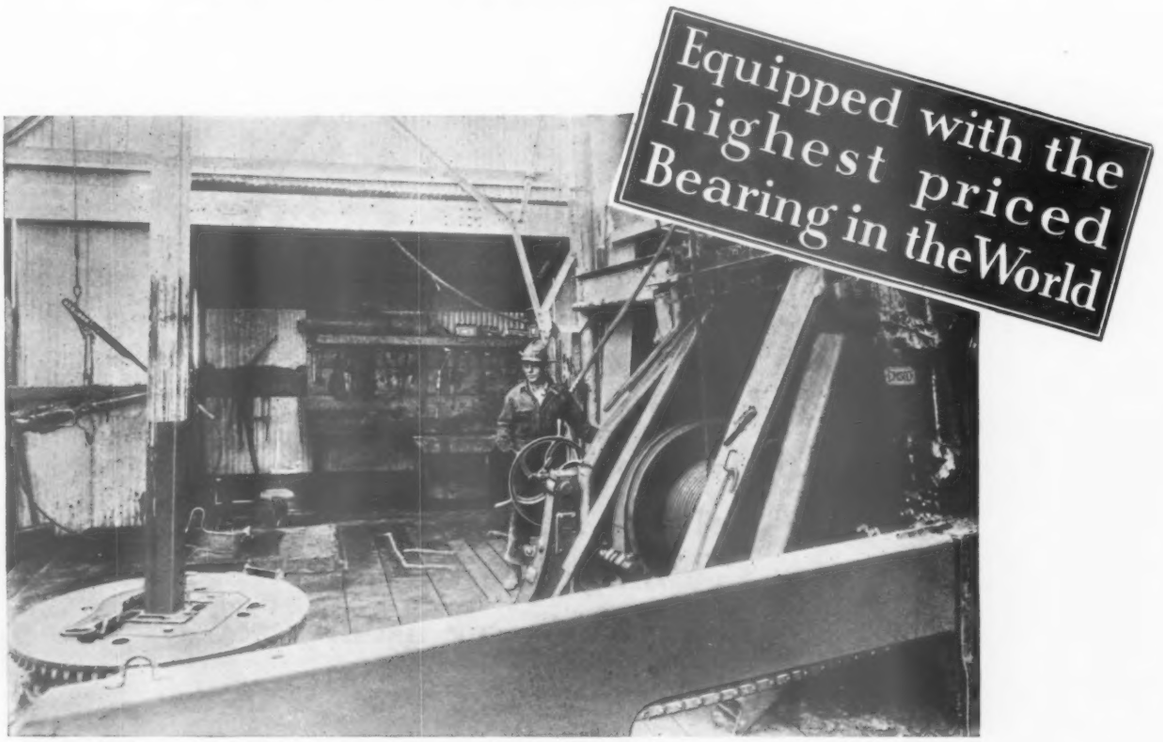
ELECTRIC POWER is the most economical power for pumping, drilling, lighting and treating—as well as most flexible and most easily installed.

Our Engineers will be glad to consult with you and explain how and why.

WEST TEXAS UTILITIES COMPANY
In the Land of Opportunity
GENERAL OFFICES - ABILENE, TEXAS.

ANOTHER MANUFACTURER IN THE OIL INDUSTRY THAT USES SKF BEARINGS

EMSCO DERRICK & EQUIPMENT CO.



EMSCO EQUIPMENT MUST DO 24-HOUR SERVICE... SO THEY USE SKF BEARINGS

DEPENDABILITY and Safety! —These were the two guiding standards in the design of the Emsco hand operated "screw brake." Naturally, there could be no compromise in meeting these factors and the selection of vital parts. Price, therefore, was not upper-most in the choice of three SKF Ball Bearings for the job.

In addition, two SKF Spherical Bearings are used in the drilling table. When oil field equipment is put to work it is expected that it will stay working with no trouble and little maintenance. SKF Bearings combine smooth operation, ruggedness and low maintenance with no adjustments which make them a profitable investment for this exacting industry.

SKF INDUSTRIES, INC., 40 East 34th Street, New York, N. Y.

2516

EQUIPPED WITH THE HIGHEST PRICED BEARING IN THE WORLD

Means just this

SKF

Ball and Roller Bearings

That the manufacturers whose product is illustrated above preferred to pay more for their bearings and less for servicing or replacing them. They preferred to pay a higher price in the beginning than many times this higher price in the end. And, finally, they preferred to economize by using SKF bearings because they are made to do their job, not to fit a price list.

"For every joint on every line"

Strong, flexible joints . . . leak-proof for the life of the pipe . . . laid faster and by unskilled labor . . . Victaulic Couplings win instant favor wherever used.

• • •

Mail the Coupon for Victaulic Bulletin

Victaulic Couplings are available for all sizes of—steel—wrought iron—cast iron and spiral weld pipe—any pressure. Mail the coupon for detailed information.

VICTAULIC COMPANY OF AMERICA
26 Broadway New York

"For every joint on every line"

FLEXIBLE LEAK-PROOF
VICTAULIC
REG. U. S. PAT. OFF.
PIPE COUPLINGS

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For uses, installations, specifications and prices, fill in and mail this coupon.

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26 Broadway New York
Please send me VICTAULIC BULLETIN No. 8

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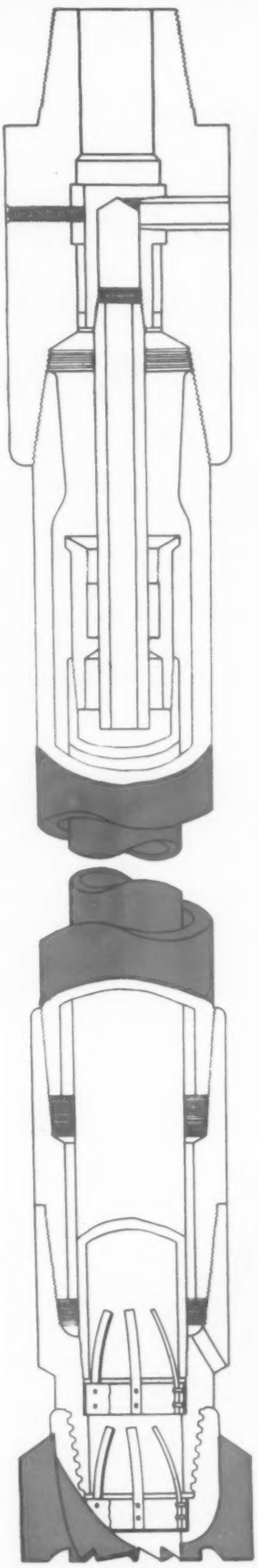
Address.....



the H.C. SMITH "TYPE B" CORING OUTFIT

Simple in construction—dependable in operation—capable of getting cores in any formation, in original position, uncontaminated, for scientific analysis.

The Type "B" Coring Outfit shown here consists of our regulation outer barrel and special reverse circulation inner barrel, with a 2-piece bit which permits either the discarding of the bit head or rebuilding of same. Where rebuilding facilities are available, the head can be rebuilt and run many times. Write at once for complete information and service records.

H. C. SMITH MANUFACTURING CO., INC.

Division of

GLOBE OIL TOOLS CO.

Los Nietos, Calif.

Branch Offices and Warehouses:

Bakersfield, Calif. Ventura, Calif.

Kettleman Hills, Calif. Taft, Calif.

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Cable Address: "Smithco, Whittier"

H.C. SMITH *Quality* TOOLS

STRAIGHT HOLE

Clean-Cut—True to Gauge
In Any Formation
At Any Depth

Straight hole is mostly a matter of skillful drilling with the right kind of tools. Any one of a long list of major oil companies can tell you that with proper handling Alco Bits will dig straight hole—dig it fast and at a cost way below the average. Nor is the efficiency of Alco Bits limited to their performance in any one formation. Taking the run of hard and soft streaks as they come, without time wasted in changing bits for each formation, Alco Bits will average more hole and deliver more dollar for dollar service than any other bits you can use. And Alco Reamers match them for performance.

ALCO Bits and Reamers

Take your choice of two types of bits—standard Alco 4-Way pilotblade type with solid blades, or type "O" with toothed blades that "plow" up the formation. Two types of reamers are also furnished—the new Alco Roller Reamer and the standard drag type with four offset blades. Both are built on a body in the form of a collar that fits over the sub of the bit shank, and both give economical, trouble-proof, efficient service.

Alco OIL TOOL CO. Inc.

P. O. Box "A", Compton, California

Bakersfield—Maricopa—Ventura

Houston TEXAS ◆ Oklahoma City OKLAHOMA

OIL WELL ALCO TOOLS

5 Barrels a Day!

If you were asked to donate five barrels of your crude a day to charity you would probably wonder, or say, "What's the big idea?" But have you ever realized that unless you are storing your crude in good substantial leak-proof tanks, constructed to retain the light fractions under pressure, you are losing five barrels—or more—every day, including Sunday, out of every 250 barrels? That is a definitely proved fact for tests show that much evaporation, to say nothing of the lower prices due to a lower gravity. Save that crude—it is better to give it to charity and enjoy doing so, than to let it be lost forever.

This Crude Saved Would Soon Pay for a B S & B Perfection Vapor Pressure Tank

Steel

The B. S. & B. Perfection Vapor Pressure Tank is equipped with the B. S. & B. Thief Hole Pressure Vacuum Valve, which operates at 16 ounces pressure or 2 ounces vacuum. This valve protects the tank as the tank itself protects your crude, making it possible for you to deliver all your production and at well-head gravity, to the pipe line.

Wood

For Southwest Texas and the Panhandle where there are found Hydrogen Sulphide gases in sour crude, we manufacture the B. S. & B. Vapor Pressure Tanks, using Redwood. This wood is impervious to the action of the Hydrogen Sulphide gas fumes. Built like our regular steel tanks and equipped with B. S. & B. Thief Hole Pressure Vacuum Valve with no metal parts exposed to the gas fumes. Thus a tank that positively defies corrosion!

B.S.&B. Perfection Vapor Pressure TANKS

The Watch Dog of Your Crude

We also manufacture A.P.I. tanks. B. S. & B. A.P.I. Bolted Steel Tanks conform to A.P.I. dimensional standards and to the exacting standards of B. S. & B. manufacture and carry the official A.P.I. monogram.

From South America to Canada there's B. S. & B. "Service on the Dot" and "Service on the Spot." Distributing points are located throughout the Mid-Continent and Rocky Mountain Oil Fields. At each of our Fifty Field Stations there are complete stocks, and our own trained tank erecting crews.

FROM OUR BRANCH TO YOUR LEASE IN A FEW HOUR'S TIME. — And B. S. & B. Service doesn't stop when tank is erected!

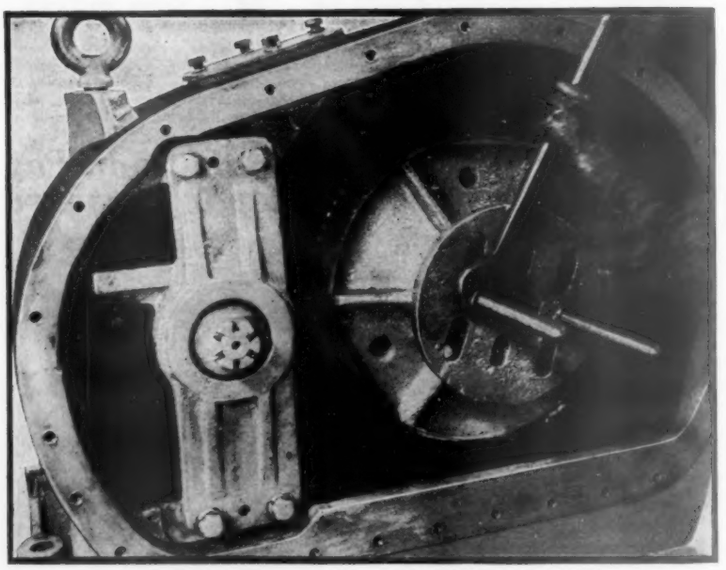
EFFICIENT B S & B SERVICE DEPENDABLE

Learn more about the B. S. & B. Vapor Pressure Tanks—made of steel or wood. Let us send catalog and literature of these tanks. Better still, a representative! Kindly address Department A-24.

Our Watchword QUICK SERVICE

Black Sivalls & Bryson
INC.
BARTLESVILLE - OKLAHOMA

Changing pumping speeds *EASILY* with OP REDUCTION GEARS



Removing change gear from a Westinghouse-Nuttall pumping unit. Mating pinion is removed by taking off bracket at left

QUICKENING or slowing up the pumping stroke — whichever is necessary because of changed well conditions—is a simple job on any well equipped with a Westinghouse-Nuttall double reduction gear.

By the "change gear" feature provided exclusively in these units, at least fifty different pumping speeds can be obtained in any unit without affecting the most efficient operation of the motor.

The desired speed is obtained by merely replacing one gear and one pinion with those of the proper ratio. This can be done right at the well without even disconnecting the pitman or the motor from the unit, and within two hours' time. A large wrench and a puller plate—the only special tools required—are supplied with every unit.

This wide adaptability adds greatly to the economy as well as to the convenience of pumping equipment.

Detailed information of Westinghouse-Nuttall oil well units may be obtained from any branch of the Oil Well Supply Company, located in all fields, or from any Westinghouse sales office.

Service, prompt and efficient, by a coast-to-coast chain of well-equipped shops

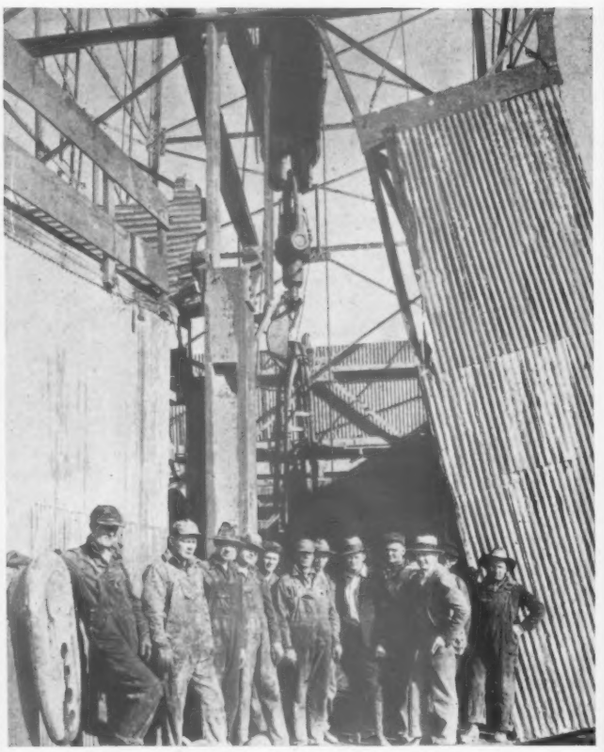
Westinghouse

T 30935-B

TUNE IN THE WESTINGHOUSE SALUTE OVER THE N. B. C. NATION-WIDE NETWORK EVERY TUESDAY EVENING.

OKLAHOMA CITY .... ANOTHER REGAN FIELD

REGAN



Mid-Kansas Oil & Gas Co., Trosper well No. A2, Oklahoma City. Depth 6235 feet. Drilling crews of the H. L. Blackstone Drilling Co. Left to right: Clarence Jones, derrick man; George Smith, Joe Harrington, T. E.. Rixley, L. C. Marshall, R. J. Fish, J. R. Baker, farm boss; Jack Jackson, driller; Joe Johnson, driller; W. A. Pitts, Regan Sales Co. representative; Clarence Davis, roughneck; Paul Histler, roughneck.

THE BIG RED BLOCKS PREDOMINATE

More Regan Crown & Traveling Blocks are in service in the Oklahoma City field than any other types. Operators in this field, recognizing the need for blocks of great weight, rigid construction and designed to carry the heaviest loads, selected Regan Blocks. Count the Regans in Oklahoma City—or in any other active rotary field. They *predominate!*

New bulletins featuring Regan Types A and B Crown Blocks, and Types 5A and 3B Traveling Blocks, are now ready. Ask for copies.

Regan
Forge & Engineering Co.
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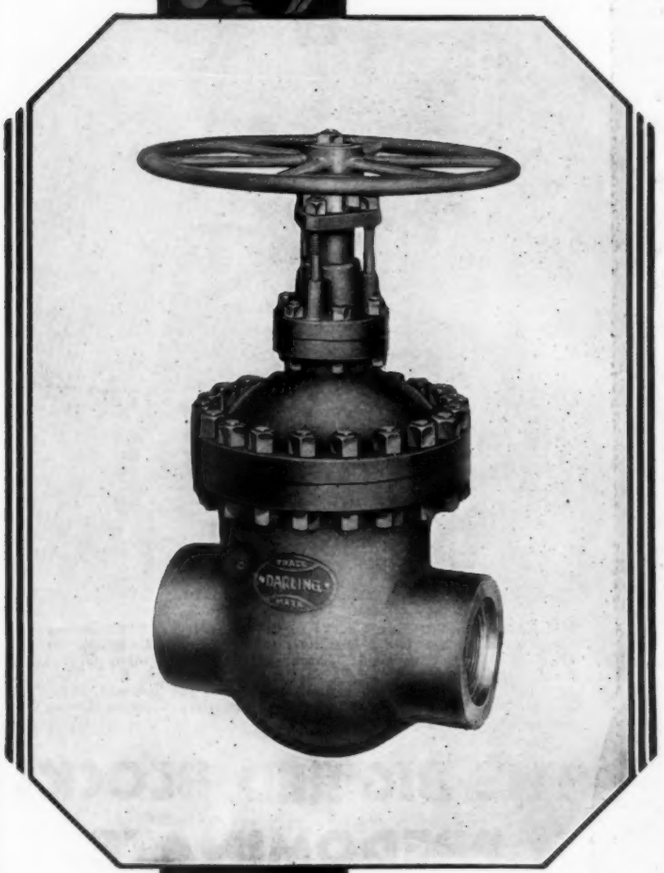
CROWN & TRAVELING BLOCKS



The Margin of Safety

High pressure wells demand something stronger and more reliable than the material that goes into the ordinary valve. It is no use walking on thin ice when you can have the solid protection of *forged* steel.

Darling Forged Steel Valves are made in working pressures of 1500 and 3000 pounds and that means, of course, a wide margin of safety for your men and property.

Descriptive catalog on request. Send for it.

Darling Valve & Manufacturing Co.

Williamsport, Pa.

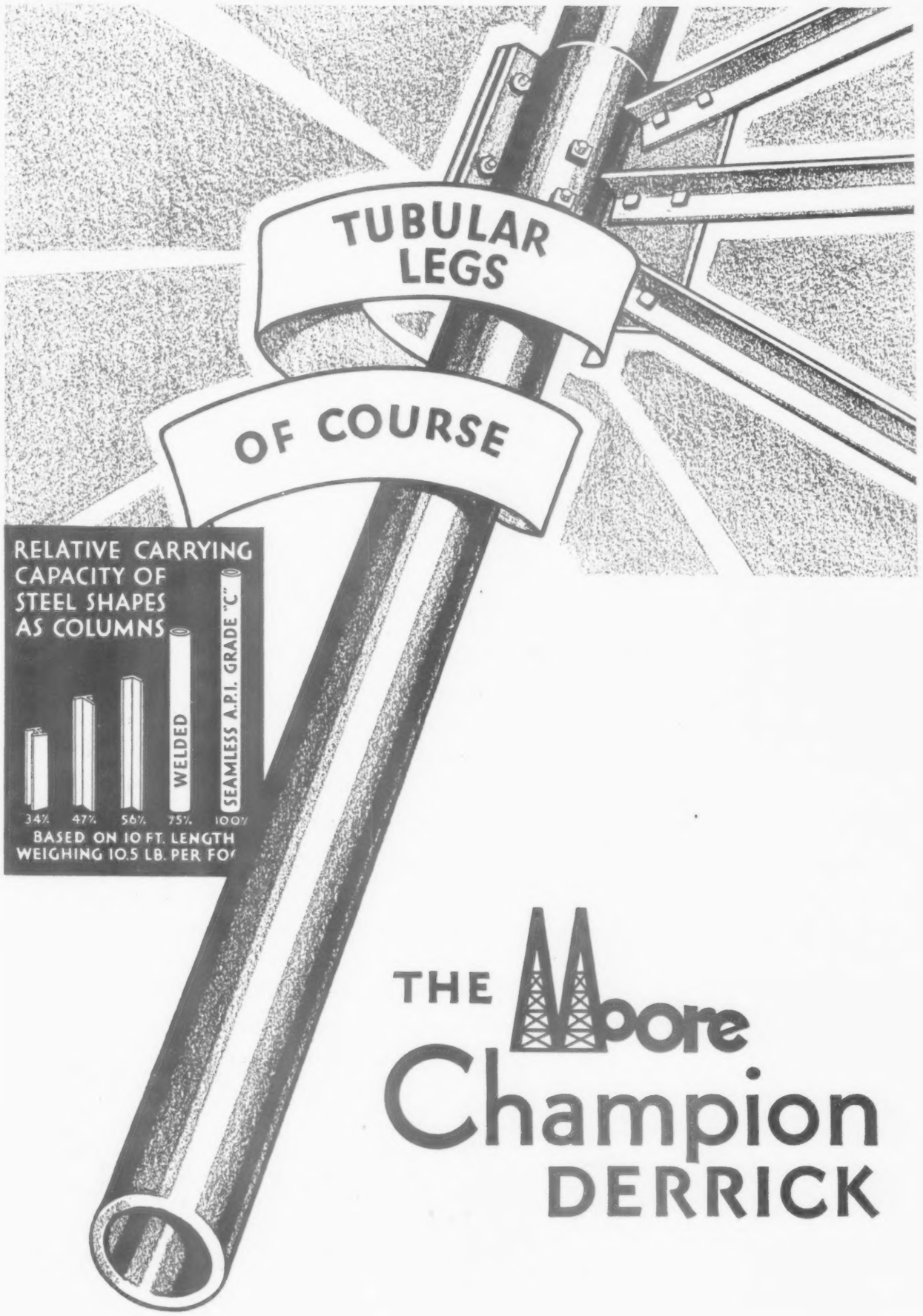
NEW YORK CHICAGO OKLAHOMA CITY HOUSTON

Mid-Continent Distributors:

Frick-Reid Supply Corp. Petroleum Supply Co.
International Supply Co.

***Foreign Sales Mgr.*, H. M. HEIN, Room 1405, 152 W. 42nd St., New York, N. Y.**

DARLING
GATE VALVES



THE Moore Champion DERRICK

SUPER LEG STRENGTH

A derrick is only as strong as its legs. Moore super leg strength is achieved by the use of seamless pipe leg sections of 40-50 carbon steel. These sections have a minimum yield point of 45,000 pounds per square inch. Their relative strength, when used as columns, is indicated by the chart.

Armored inside and outside by galvanizing, Moore Legs retain their super strength. Champion Derrick leg sections are galvanized by the hot dip process, after all fabrication is completed. No raw edges, either outside or inside, are left exposed to the ravages of rust.

THE Moore

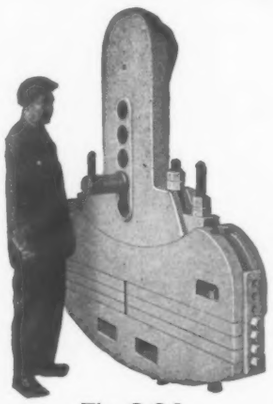
LEE C. MOORE AND COMPANY, INC.
PITTSBURGH Established 1907 TULSA
New York Offices
Oilfield Equipment Co., 30 Church Street, New York, N. Y.
DALLAS, TEXAS WICHITA, KANSAS CASPER, WYO.
SHREVEPORT, LA. HOUSTON, TEXAS
Stocks in All Principal Fields

Moore ALL STEEL RIG EQUIPMENT

Champion DERRICK

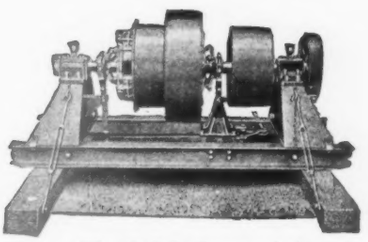
OCS

UNIVERSAL
RIG FRONTS
An Assembly of Proven Units



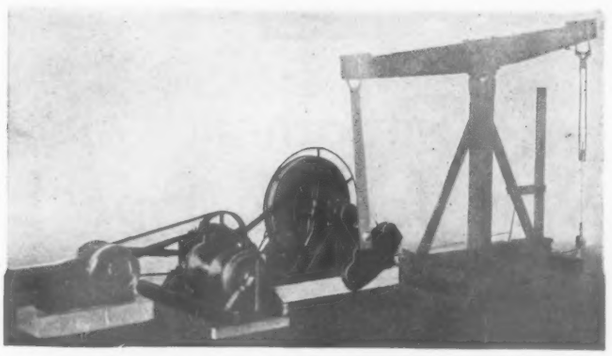
The O.C.S.
Crank Type Balance

O.C.S. Pumping Hanger



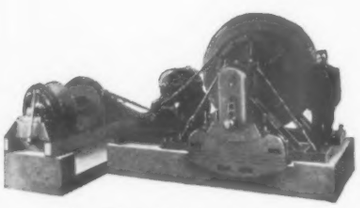
The O.C.S. Countershaft

With TIMKEN BEARINGS

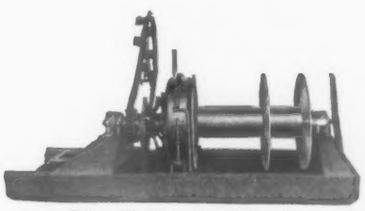


For Gas Engine Power with O.C.S. Countershaft

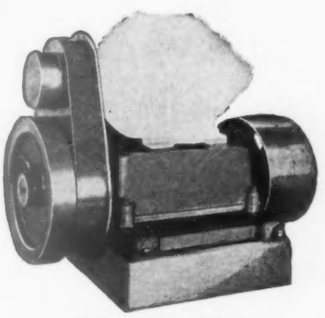
With DIAMOND CHAINS



For Electric Power with
The O.C.S. Diamond T Unit



The O.C.S. Sand Reel



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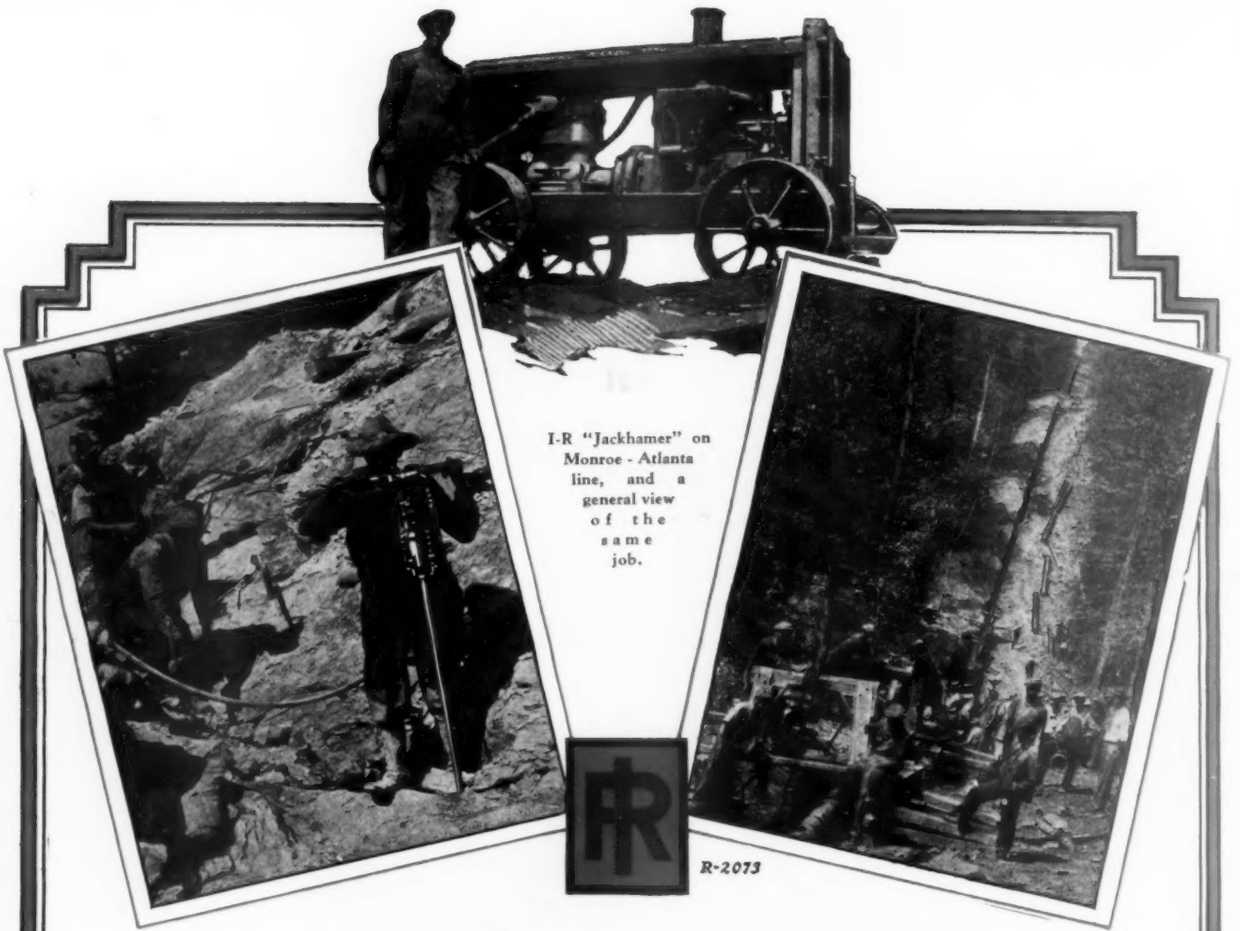

I-R "Jackhamer" on Monroe - Atlanta line, and a general view of the same job.

R-2073

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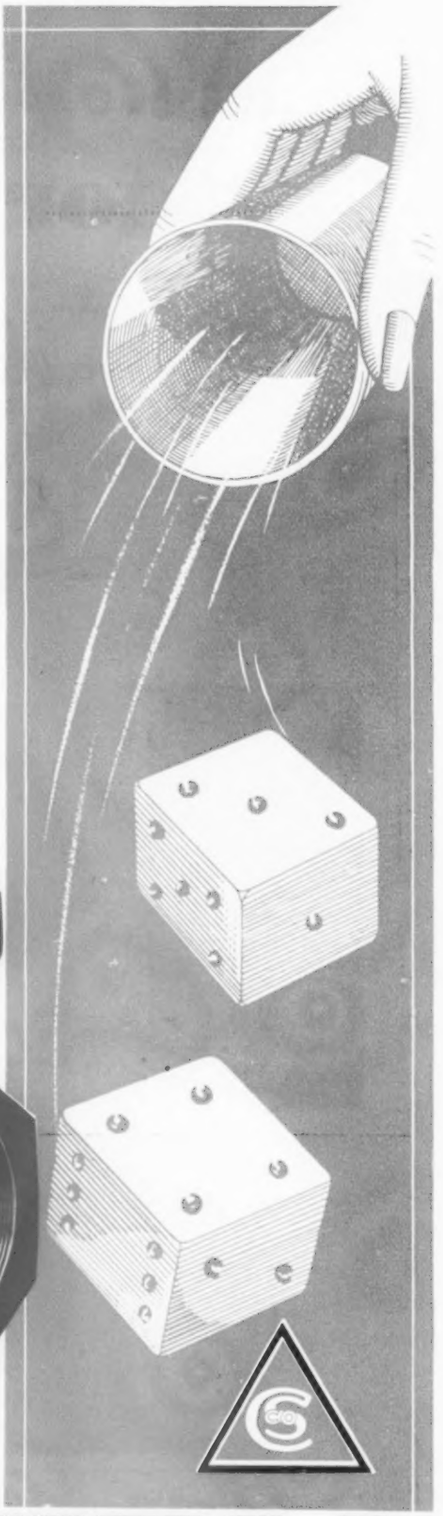

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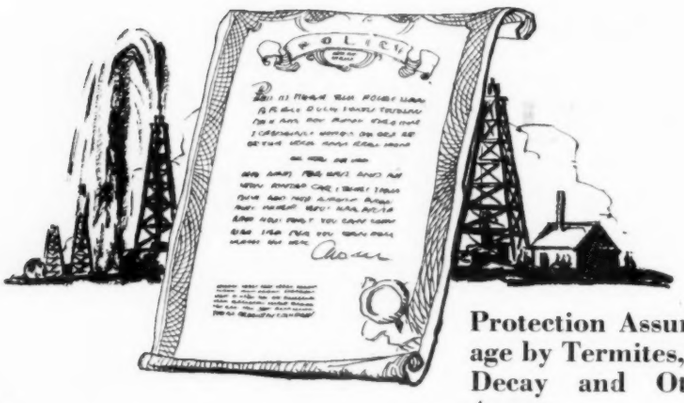

Protection Assured Against Damage by Termites, Teredos, Fungus Decay and Other Destructive Agents.

Photographs through courtesy of the San Francisco Bay Marine Piling Committee.

WHEN you buy "Black Beauty" Products you really buy an insurance policy to protect your timber against the destructive agents that work havoc on untreated timber. You guard against the danger of expensive replacements and repairs. You add years of life to timber which, if untreated, might be reduced to waste in the short span of six months. The additional cost for treated timber pays a big premium in the end.

No locality is free from the enemies of untreated timber. On land there are termites and fungi. In salt-water locations there lurks the teredo, Bankia seteca, Limnora and other destructive parasites. The accompanying photographs show the teredo and an example of marine borer damage. You can secure protection for your timber by using "Black Beauty" products. They are insurance for the oil fields.

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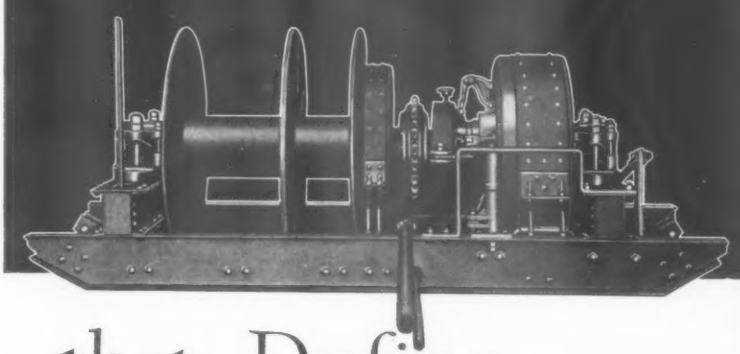
TEXAS CREOSOTING COMPANY

ORANGE, TEXAS HOUSTON, TEXAS

A Chain-Driven Sand Reel



that Defies DISTORTION

Extra-heavy members throughout, riveted and braced by heavy bridle bars and box-girder bearing supports at each end, make the KM CO Chain Driven Sand Reel a stubborn unit in the hands of Distortion. Extra strength and rigidity keep the reel in alignment and reduce wear at all bearing points while in operation and while moving.

Another feature that eliminates out of line movement is the direct action on both service and emergency brake bands, which also does away with lost motion. Service brake and emergency brake are extra large and adjustable for taking up ordinary wear. All band connections accessible from front side of reel, for removal to replace lining.

Clutch operates through brake, instead of brake through clutch, brake remaining operative despite any possible failure of clutch mechanism. This gives the KM CO Reel a three-way control over the line at all times; Clutch, Service Brake and Emergency Brake.

Solid flange hubs support drums on all ends; outside flanges re-inforced. Large spooling capacity. Extra large shaft bearings, with removable bronze bushings, replaceable in a few minutes time, without disturbing the location of the reel or dismantling.

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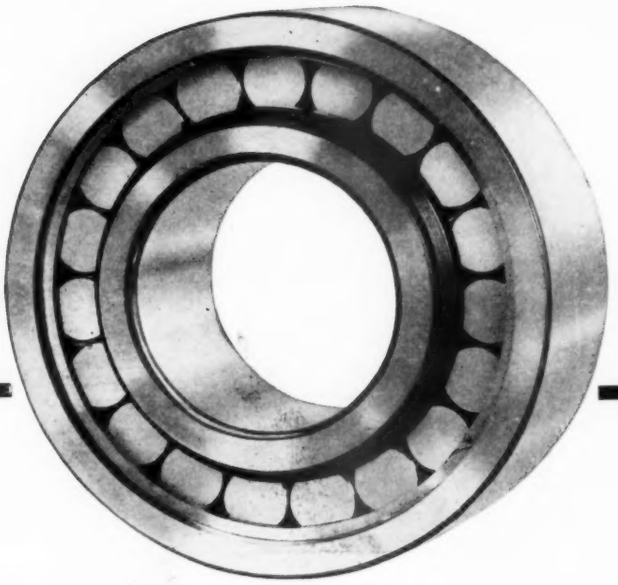

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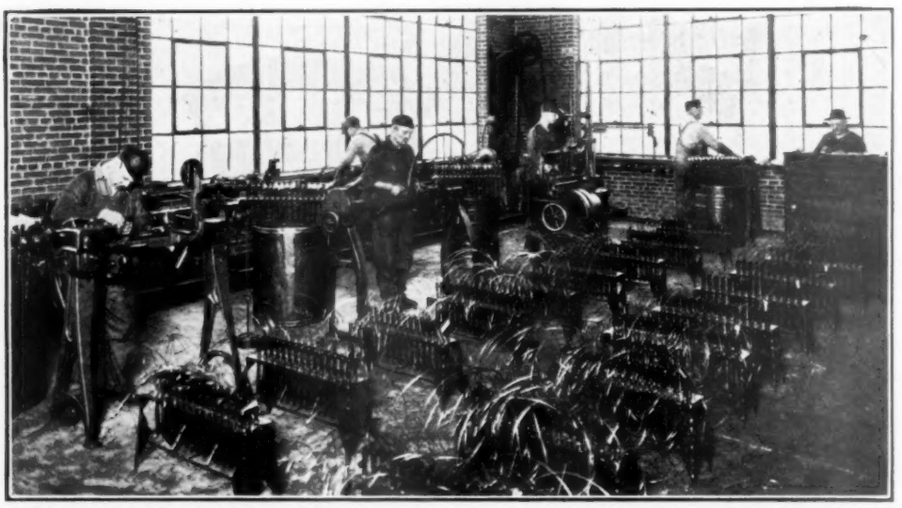

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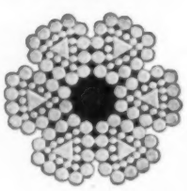

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Volume 57, No. 9 *May 16, 1930*

The OIL WEEKLY

A GULF PUBLISHING COMPANY PUBLICATION

Minority Opposition Endangers California Curtailment

By BRAD MILLS
Staff Representative

LOS ANGELES. — The collapse of the major portion of California's rather elaborate curtailment program is threatened, with Santa Fe Springs and Long Beach presenting problems which may not be overcome without drastic crude price reductions and another period of over-production. Developments during the ensuing week will tell the story, and if the majority of the holdouts in these two critical fields do not sign the agreement to hold production to the allowable figures, the lid will be off and the industry plunged into another dark era. Coming at a time when committees are working to extend the conservation work over a period of two and one-half years, the dissension may completely undo the constructive work of the past year.

Long Beach was apparently well under control, but operators tired of carrying the excesses of companies not abiding by the agreement and are threatening to kick entirely out of the harness unless a better spirit of co-operation is forthcoming. Curtailment leaders in the field realize the objections raised by willing operators are just and have virtually agreed to throw up the entire program as it applies to the field if stubborn operators refuse to meet the allowables posted by the field committee and the umpire.

May 15 Final Day

A mass meeting of Long Beach (Signal Hill) operators was held May 9 at Long Beach for the purpose of forcing the issue and challenging the opposing operators to show their hands. Abandonment of the program had been forecast if this meeting failed of its purpose, but it was decided to extend the time for signing the agreement to May 15. This was good strategy, since it was evident that the holdouts were not willing to sign without further parleying.

About 30 operators have refused to sign the agreement at Long Beach. They represent about 32,000 barrels of production and are strong enough to nettle larger independent operators who have reduced their output to conform with the curtailment agreements. The field is producing less than 100,000 barrels daily and has made a remarkable showing in the face of such resistance. Several large operators have been absorbing the bulk of over-production by reducing their output to a point considerably below the allowable figure.

A. T. Jergins, who operates the Long Beach municipal leases, and Neil H. Anderson, field umpire, pleaded for a continuation of the curtailment program, asking for 100 per cent co-operation. The names of the 30 holdouts were disclosed and all were asked to sign at the meeting.

Predictions that Long Beach crude would be cut to 50 cents per barrel were freely made, provided the holdouts do not offer to co-operate immediately. It is realized that a few operators will not sign, regardless of the penalties imposed, but if a majority of the 30 holdouts affix their signatures the impending price cut will be avoided.

Another flareup at Santa Fe Springs has placed additional obstacles in the path of curtailment in this field. George F. Getty, a leading independent operator, has steadfastly refused to sign the agreement and is now producing about twice as much oil and gas as the allowable set by the umpire and technical experts. The Wilshire Oil Company group is also producing far above the level set by the field committee and is expected to continue at such a rate. These two offenders have incurred excesses since the inauguration of the program November 1 and are so far behind with their penalties that they would be forced to shut in all wells for a long period if they could be held to their allowables. Production is running about 25,000 barrels above the level desired and will go much higher if developments during the next week are not entirely favorable.

Santa Fe Springs

There has been no change in the status of the temporary restraining order at Santa Fe Springs. Gas production is far above the figure set by the court, but the state is handicapped in enforcing the order until the higher court acts upon it. Meanwhile, gas is being wasted and there is little that can be done about it. Gas production is running up to 350,000,000 cubic feet daily, or more than 50,000,000 cubic feet above the total allowed by the court order.

The Elwood field continues the brightest spot in California, as far as curtailment is concerned. Operators in this field have passed a resolution offering to make further cuts in production if such a step will aid in stabilization of the industry. They have also agreed to hold the field output to any figure necessary to accomplish this end. Excesses in this field have been absorbed in rapid order during the past four months and despite the completion of several large wells, the overage has been wiped out in record time. Any disorder in critical fields in the Los Angeles basin will eventually affect the prosperity of the Elwood field and all operators have been quick to sense the impending danger. The success of curtailment here demonstrates the feasibility of conservation and proves that independent operators can accomplish any desired end when the necessity arises.

Study Economic Report

A report of the economic committee recently appointed to study needs over a period of time will be made next week and a plan for the division of stocks into three branches for the purpose of a systematic reduction over a period up to three years announced. A study of stocks and needs, rather than the amount of oil to be produced, has been made by this committee, but both inventories and consumption must eventually be based upon crude production. By dividing present stocks into three groups, a reduction of one may be made on a different basis than where all stocks are carried as one total. Fuel oil and gas oil comprise one group, refinable crude another and gasoline a third division. By regulating production with consumption, stocks will be

(Continued on page 80)

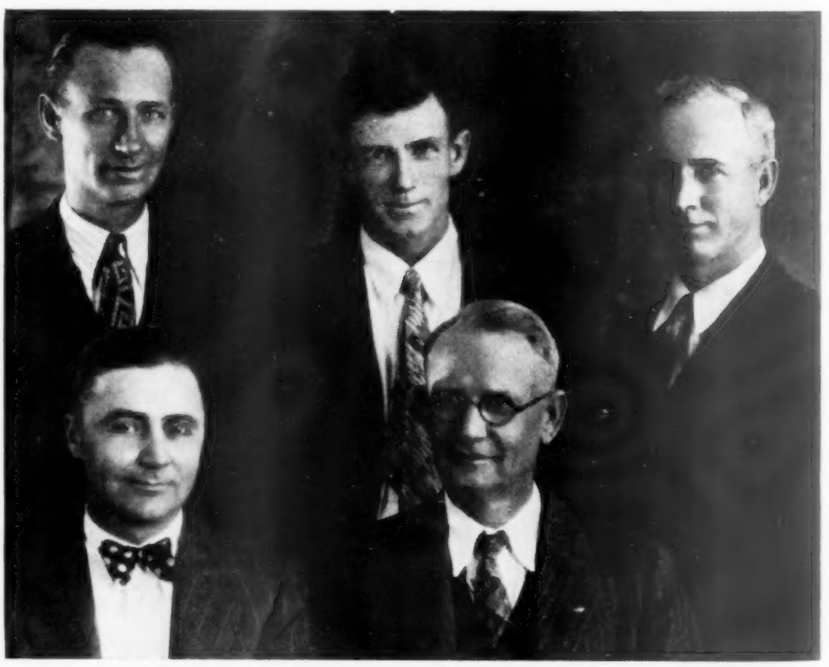
P. H. Williams' Ashe Brothers 1, *Irion County, Texas, temporarily abandoned at* 8900 *feet*

Depth Record for Cable Tools Not Excessivly Costly

By H. H. KING
Staff Representative

SAN ANGELO, Texas.—Having securely established a new record for depth of cable tool drilled hole, and in possession of the deepest test ever drilled outside of a few areas in California, Pete H. Williams, San Angelo operator and contractor, has suspended operations on his Irion County wildcat at a total depth of 8900 feet. This veteran drilling contractor played a lone hand in making new history for standard rig operations, and is satisfied with his achievement, but is offering to share a one-half interest in his large surrounding leasehold and the test with one or more companies that might be interested in carrying the hole deeper for geological information, or whatever deeper drilling may offer. Other than the presence of hot salt water in the bottom of the hole, it is in excellent condition, while the drilling performance of the cable tools at this unusual depth was more satisfactory, according to Williams, than when making hole one-half the distance from the derrick floor. The maximum depth and efficiency in drilling with cable tools remains to be established.

Hot salt water, believed to be near the boiling point in temperature, was encountered in gray sandy lime formation at 8885-8900 feet while drilling with 5 3/16-inch tools. The hole began filling about 60 feet per hour, and when drilling was ordered suspended May 1 there was about 1100 feet of water. Excepting 82 feet of 5 3/16-inch pipe serving as a liner that was landed at 8842 feet, the hole is open below the 4765-foot level. The bottom hole water would probably require the landing of a string of 5 3/16-inch pipe; pulling of the short liner, and reaming of the hole from 8842 to 8900 feet before deepening could be resumed to any appreciable depth. Rather than bear the added expense, Williams has elected to



Members of drilling crew on the Irion County deep test are shown above, top row, reading left to right: E. J. Smith, tool dresser; Alfred Mabry, tool dresser; and D. H. Vandervort, driller; bottom row, reading left to right: A. E. Henderson, driller, and Pete H. Williams, owner

Log of the Deepest Test Drilled With Cable Tools

Nature of Strata	Color, Soft or Hard	Thickness	Total Depth	
Top soil, Gray, Soft		2	2	
Lime, Gray, Soft		6	8	
Lime, Gray, Hard		2	10	
Lime, Pink, Hard		6	16	
Lime, Yellow, Hard		25	41	(water
Lime, White, Hard		71	112	(½ bbl.
Lime, Yellow, Hard		26	138	(at 135)
Shale, Blue, Med.		3	141	
Lime, Blue, Hard		6	147	
Lime, Gray, Hard		37	184	
Slate, Gray, Soft		26	210	
Lime, Gray, Med.		35	245	
Shale, Gray, Soft		13	258	lost water
Lime, Gray, Med.		12	270	at365
Lime, Blue, Med.		10	280	
Lime, Blue, Hard		13	293	
Lime, Gray, Hard		28	321	
Lime, Yellow, Hard		31	352	
Lime, White, Hard		20	372	
Lime, Brown, Med.		10	382	
Lime, Brown, Hard		43	425	
Lime, Gray, Hard		28	453	
Lime, Brown, Hard		14	457	set 15½
Lime, Gray, Hard		53	520	pipe at
Shale, Blue, Soft		5	525	473
Sand, White, Soft		28	553	water
Red rock, Red, Soft		8	565	
Sand, Red, Soft		12	577	
Red rock, Red, Med.		33	610	
Red rock, Sandy, Med.		30	640	
Sandy lime, Gray, Hard		40	680	
Red rock, Red, Soft		65	745	
Shale, Blue, Soft		12	757	
Sand, Gray, Med.		15	772	set12½-in.
Red rock, Red, Med.		173	945	pipe
Lime, White, Hard		10	955	
Red rock, Red, Soft		45	1000	
Blue slate and lime shells		30	1030	water
Sand, Blue, Med.		20	1050	salt
Slate, Blue, Med.		25	1075	
Red rock, Red, Med.		15	1090	
Lime, Gray, Hard		30	1120	
Red rock, Red, Med.		15	1135	
Blue shale, Blue, Med.		190	1325	
Lime, Brown, Hard		5	1330	
Shale, Blue, Soft		14	1344	Set10½ in.
Shale, Blue, Soft		36	1380	pipe
Sand, Gray, Soft		50	1430	
Shale, Blue, Soft		180	1530	
Lime, Gray, Hard		50	1580	
Glomeration, Red, Soft		75	1555	
Red rock, Red, Soft		15	1690	
Lime, Gray, Hard		5	1695	
Shale, Blue, Soft		5	1700	
Conglomeration, Red, Soft		25	1725	
Lime, Gray, Hard		10	1735	
Lime, Gray, Hard		10	1745	
Red shale, Red, Med.		5	1750	
Shale, Blue, Med.		5	1755	
Lime, Gray, Hard		15	1770	
Shale and lime shell, gray		5	1775	
Lime, Gray, Hard		18	1793	
Shale, Blue, Soft		7	1800	
Red rock, Red, Soft		70	1870	
Red bed, Soft, Caving		80	1950	set 8¼
Lime, Gray, Med.		3	1953	casing at
Shale, Blue, Soft		117	2070	1935
Lime, Gray, Soft		105	2275	
Lime, Dark, Hard, Sharp		95	2370	
Blue shale and lime shells, Med.		50	2420	
Lime, Gray, Med.		10	2430	
Shale, Blue, Soft		25	2455	
Slate, Black, Med.		535	2990	
Shale, Light blue,		40	3030	
Slate, Black		260	3290	
Slate, Black		25	3315	
Shale, Black		220	3535	
Shale, Black		70	3605	
Lime, Brown		8	3613	
Shale, Light		8	3621	
Lime, Brown, Broken		19	3640	caving
Sand, Hard		14	3654	little
Shale, Blue		11	3665	water
Lime, Brown		4	3669	at 3645
Shale, Blue		6	3675	
Lime, Gray		3	3678	
Shale, Brown		7	3685	
Lime, broken, Brown		10	3695	
Shale and lime shells, Gray		10	3705	
Shale, Gray		25	3730	
Lime, broken, Brown		14	3744	
Blue Shale		10	3754	
Lime, Brown		4	3758	
Shale, Blue		1	3759	
Lime and shale, broken, Brown		21	3780	
Shale, Brown		42	3822	
Lime, Brown		5	3827	
Brown shale and shells		10	3837	
Lime, Brown, Hard		18	3855	
Shale, Dark		7	3862	
Lime, Brown		6	3868	
Shale, Brown		10	3878	
Lime		8	3886	
Shale, Blue		6	3892	
Lime, Brown		4	3896	
Shale, Blue		10	3906	
Lime, Brown		5	3911	
Shale, Blue		12	3923	
Lime		3	3926	
Shale, Blue		9	3935	
Lime, Brown		20	3955	
Shale, Dark		20	3975	
Lime, Brown		25	4000	
Shale, Dark		10	4010	
Lime, Gray, Hard		35	4045	
Shale, Light		9	4054	
Lime, Brown, Broken		21	4075	
Shale, Light		20	4095	
Lime		5	4100	
Shale, Blue		28	4128	
Shale, Light		60	4188	
Lime		8	4196	
Shale, Blue		6	4202	
Lime, Brown, Hard and sharp		16	4218	
Lime, Gray, Sharp		17	4235	
Shale, Dark		11	4246	
Lime, sandy, Gray		74	4320	
Shale, Dark		15	4335	
Lime, Brown, Hard		18	4353	
Shale, Blue		12	4365	
Lime, Gray		5	4370	
Shale, Blue		8	4378	
Lime, sandy, Gray		17	4395	
Shale, Dark		15	4410	
Lime, Brown		32	4432	
Shale		5	4437	
Lime, sandy, Gray		21	4458	
Shale, Dark		7	4465	
Lime, sandy, Gray, Broken		31	4496	
Lime, sandy, Gray		54	4548	
Shale, Dark		4	4552	
Lime, Gray		13	4565	
Shale, Dark		35	4600	
Lime, Gray, Sandy		40	4640	
Lime, Black		30	4670	
Lime, Gray		55	4725	
Shale, Dark		5	4730	
Lime, sandy, Brown		26	4756	
Shale, Dark		9	4765	
Lime, Brown		33	4808	
Lime, Black		39	4847	
Lime, Black		193	5040	
Lime, Brown		15	5055	
Lime, Gray		7	5062	
Shale, Light		18	5080	
Lime, sandy, Gray		8	5088	
Shale and shells, Black		69	5157	
Lime, Hard		10	5167	
Shale and shells		53	5220	
Lime, broken, Brown		50	5270	
Lime, sandy, Gray		65	5335	
Lime, broken, Brown		25	5360	
Lime, Brown, Hard		60	5420	
Lime, sandy, Gray, Hard		10	5430	
Shale, Black		10	5440	
Lime, sandy, Gray, Hard		20	5460	
Lime, broken, Brown		35	5495	
Lime, Brown, Hard		15	5510	
Shale, Black		50	5560	
Lime, broken, Brown		50	5610	
Shale and lime shells, Black		50	5660	
Brown lime and shale		25	5685	
Lime, Gray, Hard		10	5695	
Lime, Brown		38	5733	
Shale, Black		12	5745	
Lime, Black, Hard		50	5795	
Lime, broken, Brown		15	5810	
Lime, Black, Hard		5	5815	
Shale, Black		10	5825	
Lime, Black Hard		7	5832	
Lime, Broken, Brown		10	5842	
Lime shells and shale, Black		58	5900	
Lime, Brown, Hard		15	5915	
Lime, Black, Hard		25	5940	
Lime, broken, Brown		18	5958	
Lime, Black, Hard		17	5975	
Shale, Black		15	5990	
Lime, broken, Brown		65	6055	
Lime shells and shale		37	6092	
Lime, broken, Brown		35	6127	show oil
Lime, Gray, Hard		58	6185	
Shale, Light		5	6190	
Lime, Brown, Hard		35	6228	
Lime, Shells, Gray		23	6251	
Lime, Brown		11	6262	
Shale, Brown		10	6272	

(Continued on page 69)

rest on his laurels, and utilize his funds in developing more promising enterprises, such as taking on contracts for deep tests for others, and continue his wildcat drilling operations. Companies interested in carrying this hole to the 10,000-foot level, which is the maximum depth that can be reached with drilling lines and equipment now on the location, need only to furnish 8900 feet of 5 3/16-inch pipe, and funds for labor, fuel and a few miscellaneous items.

Costs Not Excessive

Contrary to general opinion of operators and company officials, the total expense borne by Williams in setting up a new depth record for cable tools is not in excess of the cost of many average depth cable tool drilled wells in Texas and Oklahoma. A check up on the amount of casing, fuel, water and labor costs bears out this statement. However, Williams withheld figures on actual cost, since he is a drilling contractor by choice, and does not deem it advisable to advertise drilling expense on a hole that was favored with only one bad fishing job, and free from the general run of hard luck that a contractor usually encounters in deep drilling.

Two installments were made by Pete Williams in the drilling of his deep test on the Ashe Brothers' ranch, located at the center of the northwest quarter of Section 20, Washington County Railroad survey, Irion County, about seven miles northeast of Barnhart. A contract was assumed in January, 1926, to drill to the June of the same year. A checkerboard lease spread of eight 80's were sold to 3500-foot level, which was reached in Dixie Oil Company against this operation, but no additional funds have been realized since from outside sources towards the deep test that followed. This hole was plugged.

Deciding to make a try for the Big Lake field 8500-foot oil and gas producing horizon in the summer of 1929, Williams increased his Irion County leasehold to about 21,000 acres, being solid around the location, except for the acreage held by Dixie Oil Company. Cleaning out work on the plugged hole started August 5, 1929, and about 30 days were required to fish out wire line that was used by the plugging crew along with other junk to block a crevice that absorbed the plugging mud. Another 27-day period was lost pending repairs to the engine.

Williams is of the opinion that he could have drilled a new 3500-foot hole for less expense and in shorter time than that consumed in conditioning this old one, as considerable straight-reaming had to be done. The 12½-inch casing was replaced at 750 feet, and the 10-inch pipe re-set at 1850 feet. The hole at 1840 feet on the first drilling was enlarged from eight-inch to 10-inch so as to permit the landing of 8¼-inch casing at 3636 feet, while the 6⅝-inch pipe was landed in new hole at 4765 feet, thus becoming the last string of casing used. None of these strings were cemented.

Water

Water was encountered at 1430 feet, and double the volume was picked up at 3630 feet. The latter fed into the hole behind the casing, and furnished the proper amount of fluid needed in drilling. The remainder of the hole was free from water trouble until the 8885-8900-foot level was reached. The only fishing job of any consequence in deepening was encountered at 4750 feet, where a substitute driller lost a string of tools while drilling in tight hole, and a string of fishing tools were lost a few days later. This junk was drilled by successfully, and then recovered from the hole, but in doing so required the landing of 6⅝-inch pipe at a shallower depth than planned. About 30 days were lost by this mishap.

Cavings encountered at about the 8800-foot level threatened trouble for a few days. The hole was reduced from 6⅝ to 5 3/16-inch at 8842 feet to provide a seat for the 82-foot liner, which extended back into the hole to hard lime and shell formation. A long Texas pattern shoe was used on this short liner, which succeeded in eliminating the trouble with cavings .

Diesel Power

Power for all the drilling was derived from a six-cylinder 90 horsepower Fairbanks-Morse Diesel engine, which was designed for a maximum drilling depth of 5000 feet, but performed satisfactorly at greater depth, according to Williams. Fuel oil for this engine was purchased in tank car lots, and cost $980.00 for the entire project, including that used in dressing bits. Water was obtained from a nearby shallow well that was pumped with a windmill.

A steel line measurement of the hole was taken April 26 by W. H. Erwin, McCamey representative for Halliburton Oil Well Cementing Company, who had just received a new line to be prepared for measuring holes to the 11,000-foot level. This instrument corrected Williams' sand line measurement from 8847 to 8858 feet.

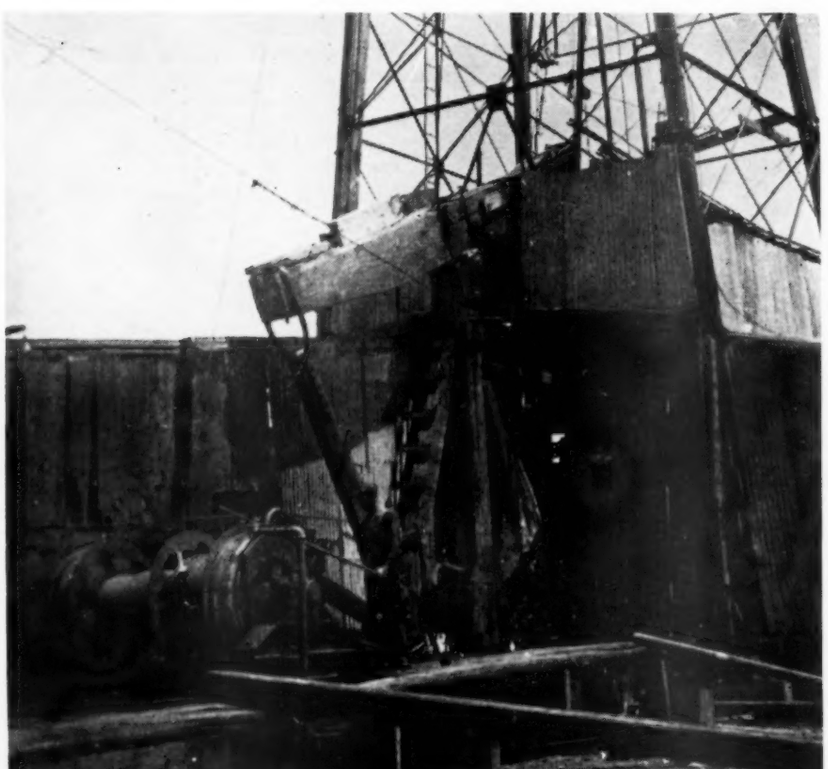
An average elapsed time of two hours was required to hoist the tools, make four round trips with the bailer, then return the tools to the bottom of the hole during the last few days of drilling, according to Williams. The tools or bailer were lowered in 10 to 12 minutes.

Steel wire lines of the American Steel & Wire Company were used by Williams in establishing his records. The first 10,000-foot line was put on at 4765 feet, and a second one at 7200 feet, while the third one went into service at 8100 feet to complete the job. These lines were all ⅞ of an inch in diameter. Even wear of these lines indicated that the hole was straight all the way. An American 84-foot steel derrick, and Parkersburg rig irons were used.

New Type Sand Reel

The Irion County deep test was the first to make use of the new type B chain driven sand reel, with friction clutch, that Parkersburg Rig & Reel Company has recently placed on the market for tests using 10,000 feet of drilling line. This piece of equipment displaced the standard sand reel when the long wire lines were put into service, and weighs 11,500 pounds.

(Continued on page 69)



Parkersburg Rig & Reel Company's new type sand reel used on Williams' Ashe Brothers 1, in Irion County, Texas

Activity on Tideland Permits at Elwood

Elwood Pier Building *an* Important Engineering Achievement

By BRAD MILLS
Staff Representative

CONSTRUCTION of well foundations for drilling on piers in the Elwood and neighboring fields stands out as one of the important engineering achievements of the year. Starting a year ago with short piers for developing tideland permits, lying outside the mean high tide line and extending about 3400 feet out to sea, wells have been located up to 1800 feet from the coast line and in water almost 30 feet deep.

The building of well foundations in the Pacific Ocean calls for much more than mere caissons and pile driving. Danger from storms and the constant tide and swell action combine to force the construction of heavy foundations which will withstand the heaviest assaults from such an enormous body of water.

Pier building had its most recent inception at Elwood but rapidly spread to nearby producing fields and wildcat areas along the coast, other districts now having one or more ocean tests under way, including Rincon, Carpenteria, Goleta, Campbell's Point and Capitan or Orella.

Building of piers has been a much smaller problem than the construction of suitable well foundations. As piers crept farther out into the ocean, requirements for building supports to handle necessary drilling equipment have become more exacting. High well foundations have been forced to carry loads as great as those nearer the shore line, besides having to withstand a sharp swaying action as the result of a naturally topheavy condition.

Failure of a foundation around one of the recently completed producers could result in the loss of 10,000 barrels of light oil daily and the contamination of several miles of ocean frontage. Permanence has also been a strong consideration, the necessity of a structure which will endure for years being obvious. Loss of a single well could easily result in damage suits involving several times the difference between the cost of a shoddy foundation and a permanent one.

Barnsdall Oil Company, operating jointly with Rio Grande Oil Company, has developed a type of well foundation which is probably the strongest structure of its kind ever designed. No expense has been spared by these organizations in building foundations at a considerable distance outside the mean high tide line and in more than 20 feet of water. Certain well defined principles have been followed, but many original ideas have been incorporated as foundations have been built farther out in the Pacific Ocean. Strength without excessive weight has been an absolute necessity, this requirement having been responsible for subterranean engineering not surpassed in any field requiring similar types of well foundations.

The well foundations essentially consists of four corner caissons, a larger center caisson, short "doughnut" caissons around the corners, all filled with reinforced concrete, and a solid slab of reinforced concrete on top of the five main caissons. The reinforcement includes steel piles, both full length and stub, arranged to give a maximum of strength.

The four corner caissons are eight feet in diameter and are made from 15-inch, interlocking Lackawanna steel piling. They are firmly anchored to the hard shale body lying about 14 feet below the ocean bottom. Besides being filled with concrete, these caissons are reinforced with six heavy H-beam stub piles and the same number of full length piles. All are driven to absolute refusal far below the top of the hard shale, upon which rests the caissons proper. In addition, a heavy H-beam stub pile is driven in the center of each corner caisson, the 12 piles forming a circle around and immediately inside the sheet piling.

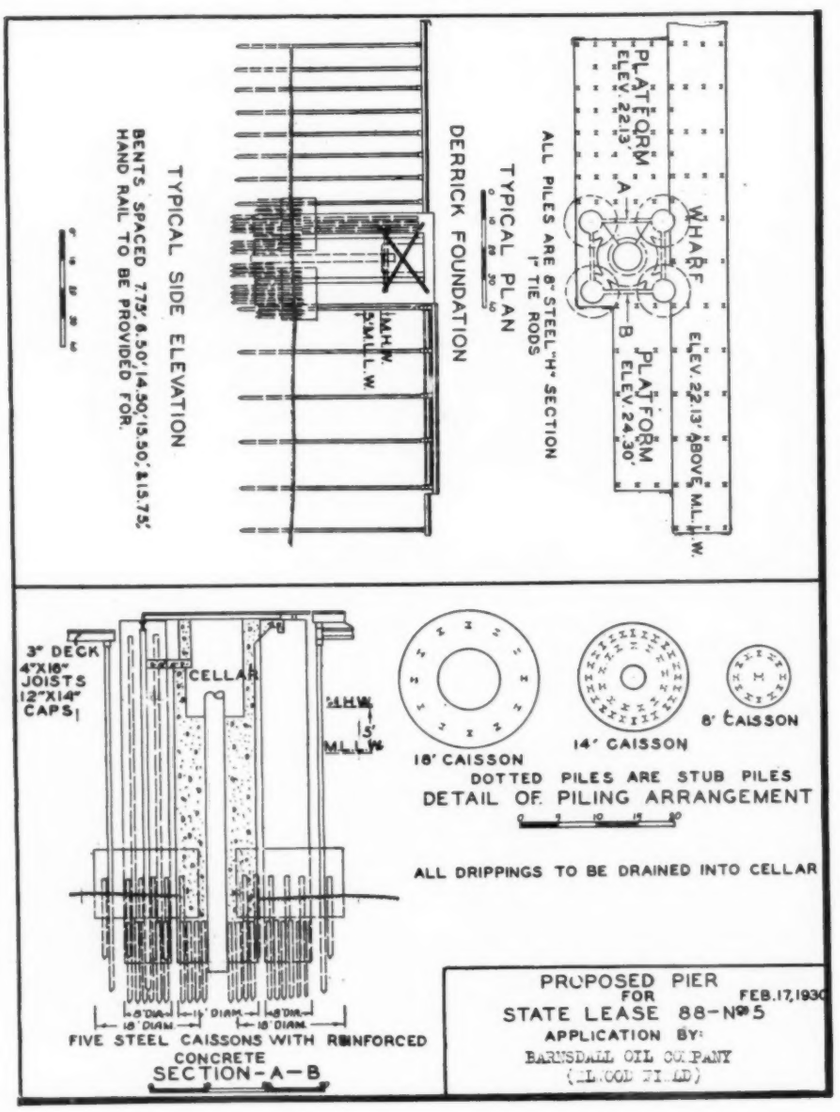
In an effort to stabilize the slender corner caissons and to offset wave action, sheet steel "doughnut" caissons, 18 feet in diameter and 10 feet high have been placed beneath the water. They are merely round tubes of quarter-inch sheet steel and are slipped over and around the eight-foot corner caissons. The bottom of the ocean is excavated to the top of the shale body and these 18-foot caissons set on this foundation. They are filled with reinforced concrete in the same manner as the smaller corner caissons. Each of these short tubes is also reinforced with 12 stub piles, driven between the inner and outer caissons and forming a circle. About 40 per cent of these doughnut caissons is below ocean bottom. The six or seven above this line practically

raises the ocean bottom to the top of the 18-foot caissons. The solid body of the concrete and steel between the full-length eight-foot corner caissons and the 18-foot doughnut tubes forms a full five-foot ring and virtually eliminates the possibility of swaying during storms. Besides bracing the corner supports, they form a kind of bottom-heavy condition so necessary during storms.

Center Caisson Strong

The fifth, or center, caisson contains the well proper and the cellar and is perhaps strong enough, if the necessity arose, to carry all the weight required of the whole structure. It is 14 feet in diameter and rests on top of the hard shale in line with the smaller caissons. It is formed by 15-inch interlocking sheet piling and is filled with reinforced concrete. This great center tube contains a total of 37 heavy H-beam piles, eight of which reach from the refusal point to the derrick floor, with 29 being stub piles. They are arranged in two circles, one immediately inside the outer shell and a second inside this circle. The outside circle contains 24 H-beam piles, of which eight are full length and 16 act as bottom anchors. The inner circle is formed by 13 stub piles. All are driven to refusal. The top of the center caisson is hollowed to contain the cellar, which is 10 feet in diameter and 17 feet deep. Even with this cylindrical opening, the outer wall, from the bottom of the cellar to the huge concrete slab on top, is two feet thick. The arrangement is such that all drippings will be drained into the cellar. This 14-foot center caisson also contains the large conductor pipe, through which the well is drilled. It naturally occupies the center of the caisson and rests at a point slightly below the bottom of main tube.

General Petroleum Corporation's 1800-*Foot Pier leading to Ferguson* 1, *at Rincon*



The five caissons are tied together on top by a huge slab of cement which is three feet thick and virtually forms the derrick floor. It is moulded to include the five huge tubes but is cut away on one side to make room for drilling equipment. The opening from the top provides only for the 10-foot cellar. Such a tower of strength for a single well probably was never used before these several derrick foundations were built early in the year. This tiein, coupled with the doughnut caissons on bottom, is expected to stand the worst storm the Pacific Ocean may witness, with a considerable margin of safety.

At a point about in line with the cellar bottom, the corner caissons are tied together with extra-heavy horizontal H-beams, which are also reinforced by steel beams forming an "X" on each of the four sides. These steel reinforcements tie the top of the entire structure together at a point a few feet above the high tide line and brace an intermediate point.

The derrick rests squarely upon the four corner caissons, the absence of concrete blocks or other type of super-structure being noticeable.

The pier is in no way tied to the well foundation. Thus vibration of the pier

does not affect the main structure. A whole section of the pier could be lost without serious damage to the foundation, engineers believe.

Safe for Deeper Drilling

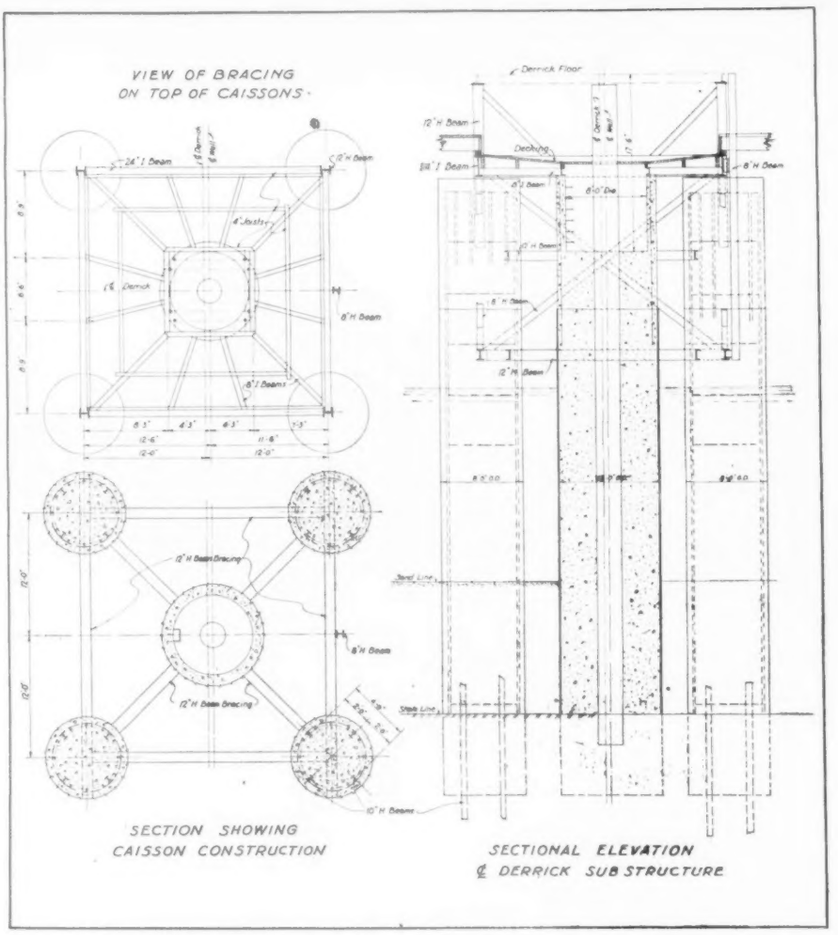
The extra margin of safety which has been built into this type of foundation will allow for deeper drilling when the present producing formation is depleted. Where around 35 tons of drill pipe is now being used, it may be necessary to double this weight in seeking new sands. The three-foot slab of concrete will be one of the chief factors in carrying this extra load.

All vital supports are set in hard shale, a formation which has been especially suitable for this type of construction. Concrete in the five caissons also contacts this hard shale body.

The well or derrick foundation recently completed for Barnsdall Oil Company's No. 88-3, a type similar to the one just described in detail, contains more than 1000 yards of material. As wells are located in deeper water, this volume of material will be increased considerably.

General Petroleum Corporation's well and derrick foundation for Ferguson 2, located on the end of an 1800-foot pier and offsetting mainland leases in the Rincon field, incorporates slightly different principles of construction than those used by Barnsdall Oil Company at Elwood, although the general caisson arrangement is the same. Bracing and reinforcement of concrete in the five caissons are also a departure from the methods employed at Elwood, while the derrick supports are unique and original in several ways.

The four corner caissons are eight feet in diameter and formed by 20, 15-inch arch web sheet steel piling, which are set in hard shale about 17 feet below the ocean bottom. Of this excavation, nine feet is in the sand and eight feet in the shale body below. Four heavy 10-inch H-beams are driven inside each corner caisson to the hard shale. Twelve 60-pound salvage rails, equally spaced inside the sheet piling to form a circle, extend from the top of the caissons to the shale line. One-inch hoops, six feet in diameter, are welded to these rails to form the reinforcement for the concrete. Eight of these hoops are used at different levels. This arrangement when set in solid cement forms a reinforcement for the corner caissons which could hardly be surpassed.



General Petroleum Corporation's well foundation for Ferguson 2, located about 1800 feet outside the mean high tide line at Rincon

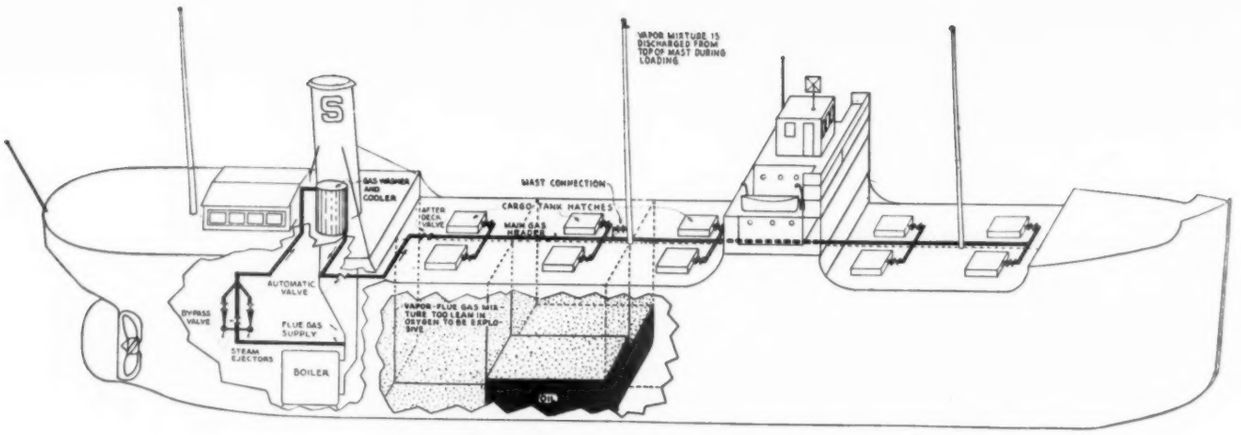
Center Caisson in Hard Shale

The center caisson is 10 feet in diameter and rests on the hard shale at the same level as the corner tubes. It is filled with concrete between the outside sheet piling and the 30-inch conductor pipe in the center which provides for the well. The cellar occupies the top of the center caisson, being eight feet in diameter and seven and one-half feet deep. Twenty-six 15-inch arch web sheet piling are required to form the caisson.

Bracing at the top of the caissons on all four sides insures rigidity and added strength. Principal bracing on one side includes heavy horizontal 12-inch H-beams between the corner caissons at an elevation of 3.5 feet and about 17.5 feet

(Continued on page 80)

Three-foot concrete slab used in tying together tops of caissons for Barnsdall Oil Company's ocean wells at Elwood



FLUE GAS SYSTEM
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Tanker Protection Given *to* Public

STANDARD Oil Company of California announces the dedication to public use of one of its most important developments in the fire protection field—a system by which explosions on tank ships are made virtually impossible.

While Standard Oil Company of California's fleet has been fortunate enough never to have suffered such an explosion, the company has realized the danger under which tankers inherently operate, and several years ago company engineers started investigating methods by which the potential hazards could be eliminated. Realizing that an explosion cannot occur unless the oxygen of the air is present to combine with the petroleum vapors, the simplest and most direct way of eliminating the hazard appeared to be some means of filling the tanks with some gas which contained little or no oxygen.

Fortunately, no special apparatus for the manufacture of such a gas is necessary on a steamship; for tremendous quantities of flue gas, from which the oxygen has been consumed by the boiler fires, are constantly passing up the stack. This is, of course, a waste product which, when properly cooled and washed, makes an ideal inert gas for introduction into the vapor space of the cargo tanks. The accompanying sketch shows diagrammatically the way this plan has been put into effect on several Standard Oil ships.

At first thought, this plan of putting gases from the boiler fires into a ship's tank might appear to be anything but a safeguard for the ship; but if the layout is examined it will be seen that, as the gases are withdrawn from the stack, they flow through a washer in which a deluge of cold salt water brings the temperature of the gas down to practically that of the sea and washes out any soot that it may carry. As a still further safeguard, an automatic valve on the cooler outlet is held open by a steam piston against the pressure of heavy springs. Steam is supplied to the piston from the steam jet pumps used to pull the flue gas from the stack; should the steam supply fail, the valve closes instantly. A connection is also made in such a manner that even partial interruption of the cooling water supply will release the steam pressure and permit the valve to close. Thus, no hot gas can possibly find its way into the cargo tanks.

For the past three years Standard Oil Company of California has been developing a system for preventing the formation of explosive mixtures on tankers, through the utilization of flue gases. The company believes that it has developed a system which minimizes a very serious hazard and has released the data developed with the idea that it would prove of value to the industry at large.

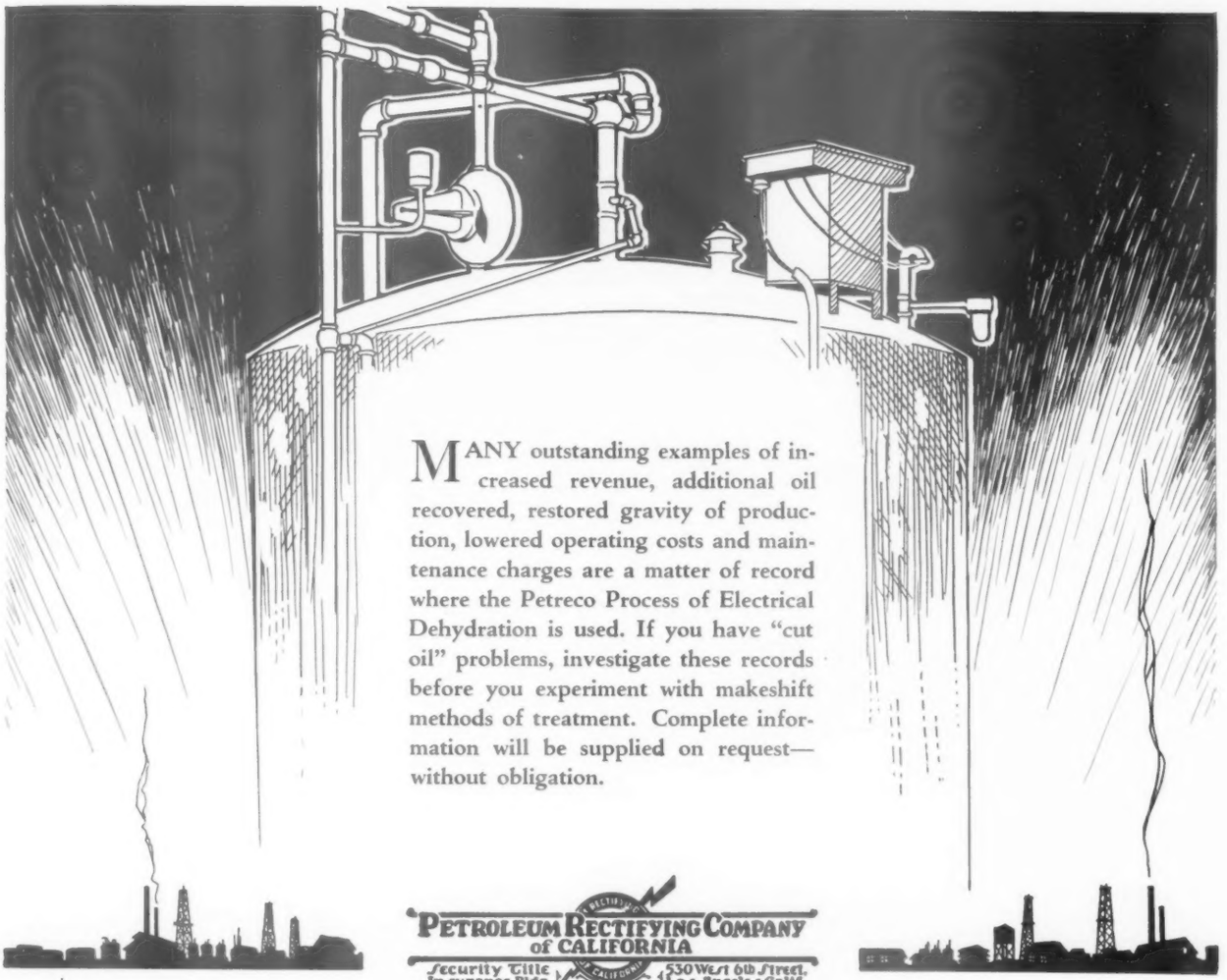
Safeguards in Three Ways

A flue gas system of the type described safeguards a tanker in three principal ways:

1. By keeping oxygen from getting into the tanks when they are emptied, it insures that during the period of unloading and the return voyage empty, the tanker's compartments are so thoroughly protected that they could not be ignited even if someone deliberately plunged a flame into them.
2. During the period of loading, the vapors, instead of being pushed out through the "ullage holes" onto the deck as is the case in an ordinary tanker, can all be collected through the flue gas piping system and discharged, through the connection shown in the sketch, up and out the top of a hollow mast. This eliminates one of the most hazardous conditions of ordinary operation; for when a tanker not equipped with such a system is loaded, a constant flow of highly combustible vapor is discharged onto the deck of the ship where workmen must walk to and fro regulating valves, getting back and forth from quarters, etc.
3. When it is desired to clean a tanker, flue gas can be blown into the bottom of the tanks through the cargo lines; and the mixture of residual petroleum vapors and flue gas discharged through the flue gas lines up the mast. By this process practically all the petroleum vapor can be quickly swept out of the tanks; and then when the tanks are opened up to be swept out, with fresh air by wind sails, there is no chance of passing through an explosive range as would be the case when fresh air flows into tanks containing straight petroleum vapors. Some of the worst tanker accidents have occurred during cleaning operations; flue gas equipped ships are effectively safeguarded against such accidents.

The first Standard Oil Company tanker to be equipped with this protective system was the S.S. "H. M. Storey," on which the system was put into commission in May, 1927. Six other tankers have since been similarly equipped. Despite the mechanical difficulties inherent in any such new development, the systems on all these ships have functioned as planned better than 90 per cent of the time that they have been in service; and on the basis of this experience it is expected that future installations should give very close to 100 per cent performance.

In order that any person or firm operating tank ships may have the benefit of this very effective form of protection, Standard Oil Company is prepared to furnish without charge to anyone engaged in the construction or operation of oil tankers general drawings illustrating the design and installation of the different parts of such a system. A full set of approximately 50 detailed working and pattern drawings will be furnished for a cost charge of $50.



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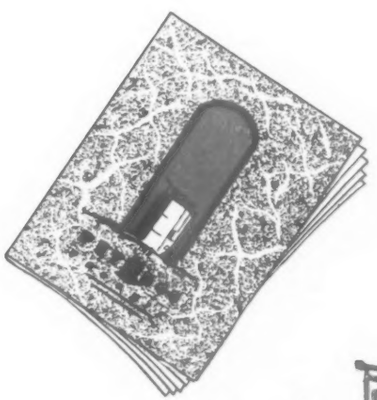
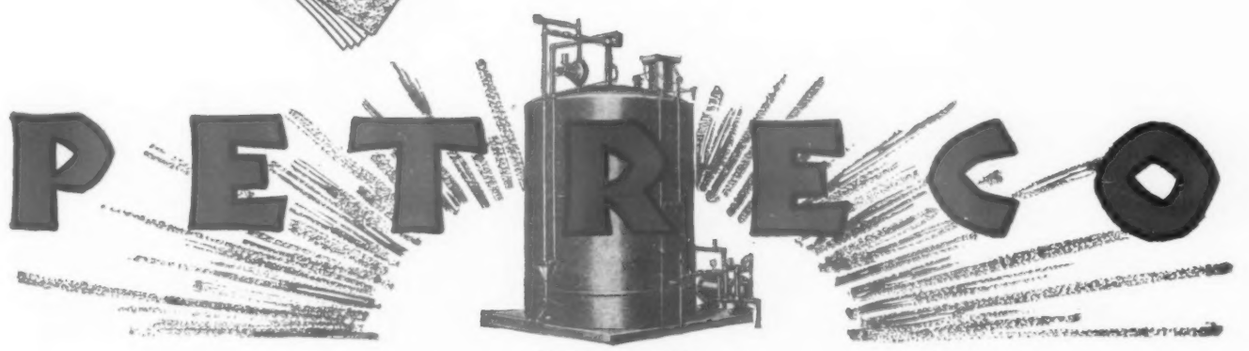


EVERY oil company executive should have a copy of our Bulletin No. 30-3 — "The Petreco Process for the Electrical Dehydration of Crude Oil Emulsion."



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Large Expenditures to Accompany Natural Gas Development

By H. J. STRUTH
Staff Economist

ONE point that was particularly stressed at the annual meeting of the natural Gas Department of the American Gas Association, held in New Orleans, May 5 to 8, is the necessity for extensive capital expenditures in connection with the future development of the natural gas industry. More than one speaker at the convention visualized continued expansion that may eventually constitute a distribution service that will embrace practically all of the concentrated centers of population in the United States. The necessity for investments of staggering proportions was admitted by leaders of the industry to present numerous problems, but the assurance of adequate reserves of natural gas, offering unlimited future supplies, was cited as justification for a program of continued expansion. It was pointed out by Henry C. Morris, chairman of the Natural Gas Department, in his opening address, that it is no doubt true that construction of long-distance transmission lines has been predicated upon a careful analysis of the market possibilities of the areas they serve, and that they have been built into territories that, if properly developed from the standpoint of their market potentialities, will adequately support their financial structures.

Another point in this connection brought out by Mr. Morris, was the question of complete saturation of the market for present uses, and development of a diversity of uses that will properly utilize the capital expenditures required by these projects. He stated that the day has passed when large deliveries of gas can be made without assumption of these heavy capital expenditures. This statement was qualified by Mr. Morris, however, when he stated that not only have large supplies been discovered within fairly compact areas but also the ownership or control of these reserves, to a very large extent, has passed into hands whose chief interest lies in their orderly and economical development. He added that this might be contrasted with the hysterical competitive situation that existed only a few years ago.

Expansion Barely Started

Innumerable times throughout the natural gas meeting, the assertion was made that recently completed developments in the natural gas business are but the beginning of a program of expansion that will place this industry foremost as the greatest force in the utility business. One gathered from the statements made, that not only will long-distance transmission lines continue to extend farther from the source of supply, but extensive mileage of lateral lines will soon engage the attention of the large distributing companies. The possibilities of more complete saturation of the potential market for natural gas distribution, suggested by the speakers, presents a prospective program of enormous proportions. What this will mean to the iron and steel industry, alone, can be readily appreciated when it is considered that the completion of newly projected pipe lines has been responsible for the recovery of that industry's business during recent months. This statement was made by Alexander Forward, managing director of the American Gas Association, at the opening session.

Gas measurement, pipe line flow, gas well delivery capacities, conservation and handling water in wells, were a few of the many interesting and important subjects presented for discussion. Field problems of the industry occupied an important part in the open forum meeting and were freely discussed by many operating men present. Among these, the handling of water in gas wells, a paper presented by J. H. Dunn, of Dallas, Texas, brought out considerable discussion. Mr. Dunn presented an interesting chart showing the production record of a gas well that was nearly ruined entirely by the encroachment of water. The chart showed how production had declined to the vanishing point, and how the installation of a water-syphoning device rehabilitated production of the well to a stabilized level. Mr. Dunn also presented a diagram of the syphon installation that aroused no little interest among the delegates.

Major Projects Started in Southwest

Another paper that was of particular interest to natural gas field executives was presented by E. L. Rawlins, natural gas engineer of the U. S. Bureau of Mines, Bartlesville, Oklahoma. Mr. Rawlins' paper, which is reproduced elsewhere in this issue, called particular attention to the fact that many of the major projects of construction of long-distance transmission lines during the past few years have originated in the fields of the Southwest. He stated that when such gas sources as Richland, Monroe, Oklahoma City and the Texas Panhandle fields are considered, the expansion of the industry to create additional large markets can be understood. He presented conclusions on the need for further study of operating problems such as water troubles, economic limits at which gas can be produced, relation of pressures to rate of flow and operation of gas fields with high back pressure. Proper spacing of gas wells was another important point brought out by this speaker.

Another branch of the natural gas business that is expanding very rapidly, as disclosed by an interesting paper presented by W. S. Yard, of California, is the distribution of bottled gas to consumers who live in areas not reached by gas pipe lines. Mr. Yard pointed out that four California companies have entered this field to date, namely, Standard Oil Company, Shell Oil Company, Carbide & Carbon Chemicals Corporation, and Rock Gas Company. Twelve thousand consumers are being served with this gas today, according to the speaker, and since this business has really just started, it is expected that it will grow rapidly and that possibly 20,000 additional consumers will be added this year.

Home service, public relations, sales promotion and development of load characteristics were other subjects covered during the course of the convention. Entertainment also proved to be an important feature of the convention, since every effort was made by the New Orleans Public Service Company to provide a full measure of frivolity along with the more serious purpose of the meeting. Under the direction of J. C. Barnes, of the New Orleans Public Service Company, the delegates were extended a measure of hospitality such as only the people of that section of the country are noted for. There was a boat ride, a ball, a smoker and an "open house" party in the French quarter of the city that furnished the delegates with the real atmosphere of the city of New Orleans.

Equipment Exhibit Missed

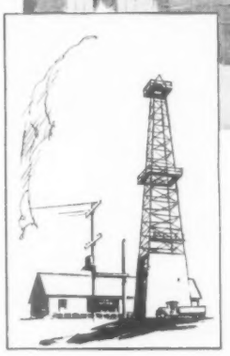
The absence of the usual exhibition of equipment and appliances at the New Orleans meeting proved somewhat of a disappointment to many of the delegates. On the other hand, it was noted that the business sessions were unusually well attended, so that there was perhaps a greater degree of concentration upon the business aspects of the convention. Final registration figures indicated that there were nearly 700 natural gas men in attendance. A majority of these, however, represented interests of the states of Louisiana, Texas, Oklahoma and Arkansas.

(Continued on page 48)

THE POWER AT PITHOLE CITY

VERSUS

THE POWER OF TODAY



THE Drake Well, the first oil well in America, came in on the morning of August 28, 1859. The news spread like wildfire. A mushroom city sprang up almost between days.. Pithole City. Soon the almost impassable roads leading to this new city where twenty-five thousand daring and adventurous men were scrambling for a place to eat and sleep, were lined with wagons stuck in the mud . . bending under their heavy burdens of boilers, engines, drilling machines, lumber.

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The Study *of* Gas Fields[1]

By E. L. RAWLINS

Natural Gas Engineer, U. S. Bureau of Mines, Bartlesville, Oklahoma

THE natural gas industry has become one of the great industries, and its expansion has stressed the importance of the many problems dealing with the design of equipment in the field and throughout the distributing system and with the efficient operation of these complex systems. The proper development and maintenance of gas-producing areas, the development of new markets, the construction of facilities to transmit the gas from the fields to the markets, and other construction and maintenance necessary to satisfy both domestic and industrial consumers have necessitated the investment of large sums of capital. The natural gas business is a utility business, and the gas companies not only have to obtain earnings on their investment but they have the moral duty of supplying consumers, regardless of cost, when necessity demands it. Satisfactorily net earnings on invested capital over a long period is possible only by practicing strict conservation of natural gas and continually studying the problems of producing, transmitting and distributing the product. As the industry has grown and expanded the complexity and importance of certain problems connected with it here changed accordingly. An adequate gas supply is essential before investments can be made in transmission and marketing facilities. In order to secure more efficient operation and to conserve the gas and prolong the life of the properties, sound engineering principles, based upon detailed study, must be applied to methods of drilling, cementing, completing wells, casing, tubing, and other phases of gas production. The intensive study, first, of individual gas well characteristics; second, of a gas field; and third, of a group of gas fields which is the source of supply for any particular system of interconnection transmission lines furnishes information that is valuable to any large operating gas company. One factor that has stressed this importance is the construction of long-distance, high-pressure pipe lines. With a limited market requiring a relatively small transmission system, which represents a limited investment and a small operating capital, a general estimate of the total reserves is adequate. However, for markets far removed from gas-producing areas which require large pipe-line projects and which involve the expenditure of considerable money, there is need for a much more careful study of gas fields. Water encroachment possibilities are more serious; reserve estimates must be based upon sound facts and logic; the ability of individual gas wells to deliver gas under any pressure conditions and the combination of individual wells to secure the best results under peak load conditions should be studied; knowledge upon which to base a record of the producing condition of a gas well at any time is neeed, and the gas well should be kept in its most efficient operating condition; the differentiation between gas delivered to market directly by well pressures and gas that has to be pumped is an important economic problem; the proper control of gas-well deliveries with back pressures to eliminate water encroachment and sand troubles and to prolong the producing life of the wells is an important operating problem; and there should be considerable more knowledge of the physical properties of gases. In reviewing the various intensive investigations that have been made in the natural gas industry, it is surprising to find how much the studies of facilities and operation from the well head connections to the consumer overshadow the studies of underground conditions. In the transmission of gas through pipe lines and the distribution to the consumers, researches into the flow characteristics of the gas and other basic problems have received considerable attention. However, little real investigative work of which results could be used as a basis for the flow characteristics of the gas from the producing sands into the well has been done.

It is not possible in this paper to discuss the many ramifications of such a subject as "The Study of Gas Fields." The discussion, therefore, will be limited primarily to individual wells and fields, the flowing characteristics of the gas in the sand and the producing string which influence reserve estimates, the availability of the gas in the sand, and the factors that are important to the operation of the entire production, transmission and distribution system.

Production of Natural Gas in the Southwest

Many of the major projects of construction of long-distance transmission lines during the past few years have originated in the fields of the southwest. It is interesting to know that in 1928 approximately 1,568,129,000,000 of cubic feet of gas were produced in the United States as marketable gas; and of this amount, 850,672,000,000 of cubic feet or 55 per cent of the total were produced in Louisiana, Oklahoma and Texas.[2] Preliminary estimates for 1929 indicate a total production of at least 1,900,000,000,000 of cubic feet,[3] and probably a large part of this gas was produced in the three southwestern states. Each of these three states has large gas fields with reserves for years to come in addition to numerous smaller gas areas more or less associated with the production of oil. When such natural gas sources as the Richland, Monroe, Oklahoma City and Panhandle fields are considered, and in many other smaller but valuable sources, the expansion of the industry to create additional large markets can be understood. Likewise, the study of the sources of supply becomes increasingly important.

Estimation of Natural Gas Reserves

The estimation of natural gas reserves requires the combination of a small amount of mathematical and fundamental knowledge and a considerable amount of common sense. The ability to realize the pertinent factors applicable to any particular project and to account for these factors in a logical manner is necessary. A few of the principles of estimating reserves have been discussed in various papers and reports.[4] The two methods of estimating reserves of gas most commonly used are the saturation method and pressure-volume method.

The saturation method is based upon calculating the actual volume of gas in the sand at any rock pressure (preferably the original rock pressure in the sand) from the porosity of the sand, the thick-

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[1] Read by permission of the director, U. S. Bureau of Mines, before the convention of the Natural Gas Department of the American Gas Association at New Orleans, May 5, 6, 7 and 8, 1930.

[2] Hopkins, G. R., and Backus, H., Natural Gas in 1928. Mineral Resources of the United States, 1928. Part II. Bureau of Mines. Published March 26, 1930, p. 378.

[3] Struth, H. J., 1929 Natural Gas Production nearly Two Trillion Cubic feet. Natural Gas, Jan., 1930, p. 5.

[4] Brandenthaler, R. R., Economic and Engineering Problems in Estimating Natural Gas Reserves, Oil and Gas Journal, June 30, 1927, p. 40.

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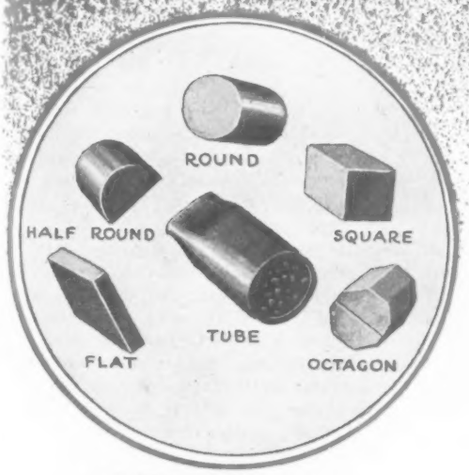

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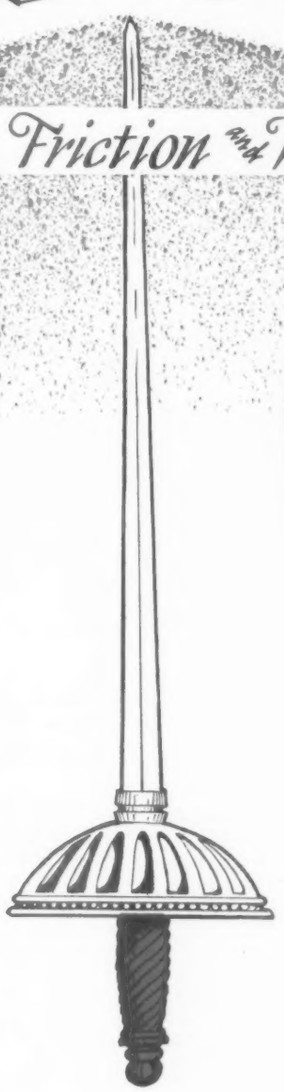

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ness of the sand, and the productive area. In other words, the actual volume of gas accupied in the total pore space in the sand is calculated. The accumulation is based upon the following formula:

$V = A\ t\ p\ P_1/P_o'$

Where V = volume of gas contained in the sand, expressed in cubic feet at atmospheric pressure,

A = total productive area of the field, square feet,

t = thickness of the sand, feet,

p = porosity of the sand, per cent,

P_1 = absolute rock pressure, pounds per square inch,

P_o = atmospheric pressure, pounds per square inch.

If the calculation is based upon the original rock pressure, the difference between this volume of gas and the volume that has been produced since these conditions existed represents the volume of gas remaining in the sand.

The pressure-volume method of computing gas reserves is based on the decline in rock pressure and the volume of gas produced from the sand during a particular decline in rock pressure. The volume of gas remaining in the sand after a decline in rock pressure from P_1 to P_2 is as follows:

$$V = V_p \frac{P_2 = P_t}{P_1 = P_2},$$

Where V = volume of gas in the sand at the rock pressure,

P_2 expressed in cubic feet at atmospheric pressure,

V_p = volume of gas produced during a decline in rock pressure from P_1 to P_2,

P_1 = initial rock pressure of the decline,

P_2 = final rock pressure of the decline,

P_t = pressure in the sand at which flow from the sand will cease.

The volume-pressure method of estimating gas reserves can be illustrated in another way. Since it is assumed that the decrease in actual volume is proportional to the decrease in rock pressure, if the rock pressure has decreased 10 per cent from the original, a volume of 10 per cent of the original volume has been taken from the sand and 90 per cent of the original volume remains in the sand.

Recoverable Gas

Both the saturation and pressure-volume methods of estimating gas reserves are based upon Boyle's law, which states that with a constant temperature the volume of gas varies inversely with the pressure. The strict mathematical application of the two methods, therefore, is for perfect conditions only; that is, the actual volume of pore space in the sand remains constant for the life of the field; the gas is such that it complies strictly with Boyle's law at all conditions of pressure and volume; the gas itself does not change as the field grows older and gas is produced from it; and other conditions are assumed that do not apply strictly in the different gas fields. All factors that have any influence on the production of the gas are therefore considered carefully in making estimates. In addition, it is necessary to study a gas area constantly; and if conditions for the basis of the original estimate are changed, revised estimates are made in time for revision of operating conditions.

The consideration of the encroachment of edge water is of particular importance, especially if the pressure-volume method of estimation is used. This encroachment actually decreases the volume of the reservoir. The effect of the water pressure increases as the gas pressure declines; therefore, the rate of decrease of the volume of the reservoir is more rapid at lower rock pressures. If original estimates of gas reserves are based on only a short period in the life of a gas area and there is edge water under a relatively high head of pressure in the producing sand, the estimate of the original volume of gas in the sand is high. In other words, the actual volume of gas produced from the area per pound decline in rock pressure is not constant but lessens as the rock pressure declines. This is true because the assumption is made that the actual volume of the reservoir remains constant for a definite pressure drop, whereas it actually is less at the lower pressure of a pressure drop.

The gas usually is in the reservoir at high pressures. Under such conditions, Boyle's law is not strictly applicable. There are more cubic feet of atmospheric gas in the reservoir than Boyle's law indicates. The deviation is greatest at the maximum pressure and decreases as the pressure decreases. If volume of gas produced is plotted as abscissae against pressure in the sand as ordinates, the actual cumulative production curves is flatter at higher pressures when compared to the estimated cumulative production curve and gradually becomes steeper at lower pressures. The total cumulative production is greater than the estimated cumulative production.

In using either method of estimating reserves, correct rock pressures are essential. First, enough wells should be "closed-in" for a sufficient length of time to insure conditions of equilibrium in the sand. Second, the pressure due to the weight of the column of gas should be added to the pressure observed at the well head to determine the true rock pressure in the sand. This item, sometimes, is of considerable importance. For instance, a gas well with an absolute pressure at the well head of 1000 pounds per square inch, a depth of 2500 feet with a gas of specific gravity of 0.7 has a pressure due to the weight of the column of gas of approximately 89 pounds per square inch.

Closed-in Pressures Vary

In many gas fields the apparent closed-in pressures on gas wells located in different parts of a field vary. Also, the actual rate of production under the same pressure conditions are different for the different wells. Under such conditions, one plan is to estimate the reserve by sub-dividing the field into different areas and considering each area a separate unit. The subdivision depends upon the conditions in the field, and wells with approximately the same rock pressures should be included in their respective areas. The total volume of reserve gas is the sum of the reserves for all of the areas. Another method of estimating reserves under conditions of non-equalized rock pressures is to determine the weighted average rock pressure of the producing sand and then calculate the reserves by use of the pressure-volume method. The field is divided into a large number of small subdivisions. The ratio of the area of each small subdivision to the area of the field is multiplied by the average rock pressure of each subdivision, and the sum of these products is the average weighted rock pressure for the entire field.

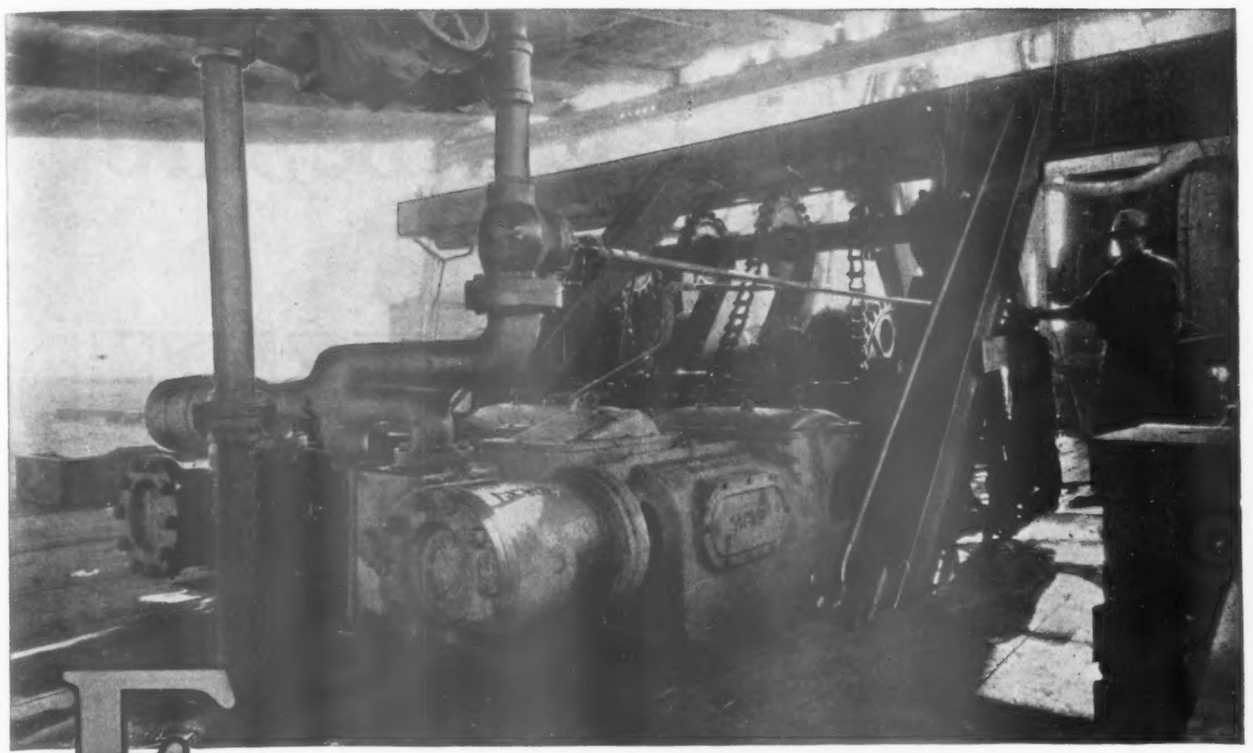
There is a good deal of difference between the actual volume of gas in a producing sand and the volume of gas that can be produced profitably from a sand. The gas that can be produced from a sand is termed "recoverable gas."

The factors peculiar to any particular gas field are considered when making estimates of reserves as a basis for a project, and an economic pressure to which the reserve is limited is selected. For instance, a field might have an average rock pressure of 700 pounds per square inch at the time a reserve estimate is made. The economic pressure below which this field could not be operated profitably might be 70 pounds per square inch. Thus only 90 per cent of the total volume of gas in the sand can be recovered profitably.

Another factor of importance is the differentiation between recoverable gas and deliverable gas. All of the gas recovered from a producing sand is not delivered to a market. In many cases, the deliverable gas, due to local operating conditions and influences beyond the control of the gas company, is not more than 50 per cent of the recoverable gas. This item should be considered carefully. The presence of an oil-producing sand in the same horizon with the gas-producing sand is one illustration of this condition. The development of the oil field under present practices, limits the volume of deliverable gas to only a small percentage of the recoverable gas. It is poor policy for a gas company to risk a huge investment in pipe line facilities under such conditions. The natural gas department of the A. G. A. has initiated an important conservation movement in the appointment of a committee to cooperate with the oil producers to effect a saving in the gas lost in the production of oil. Such a saving would be immense and would insure a reserve of gas even in this southwest country to warrant an expansion in pipe line facilities that could hardly be estimated at this time. It is surprising how few strictly gas fields are located in Texas, Oklahoma and Louisiana. Combination gas and oil fields, however, are numerous.

Casinghead Gas Reserve Estimates

A reliable estimate of gas reserves when the gas is produced with oil is a difficult problem. Gas companies can not curtail the rate of production to satisfy requirements of their pipe line facilities but the rate of production is dependent largely upon the rate of production of the oil. As a result, the analysis of the gas reserves is related closely to the reserve



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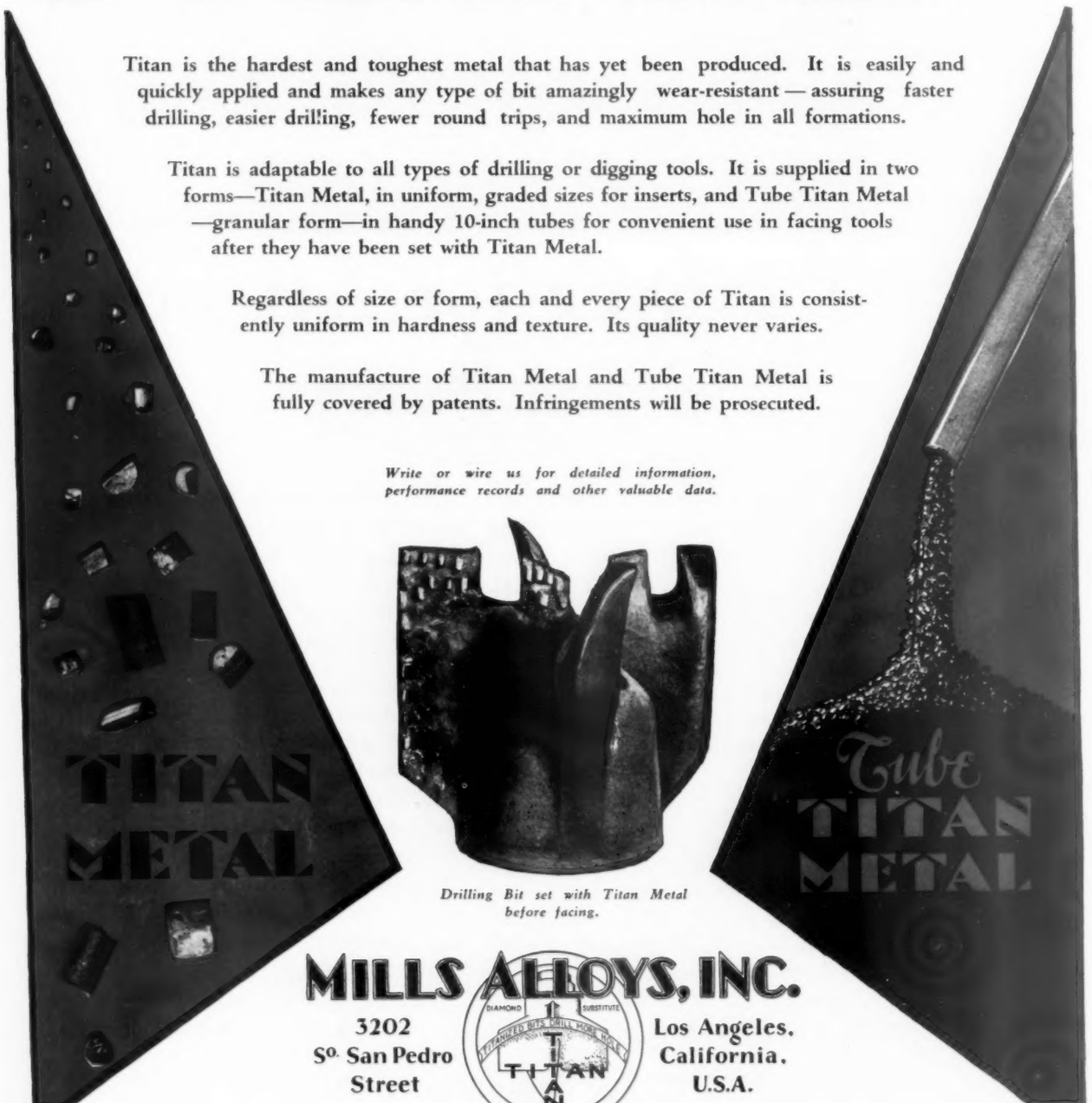

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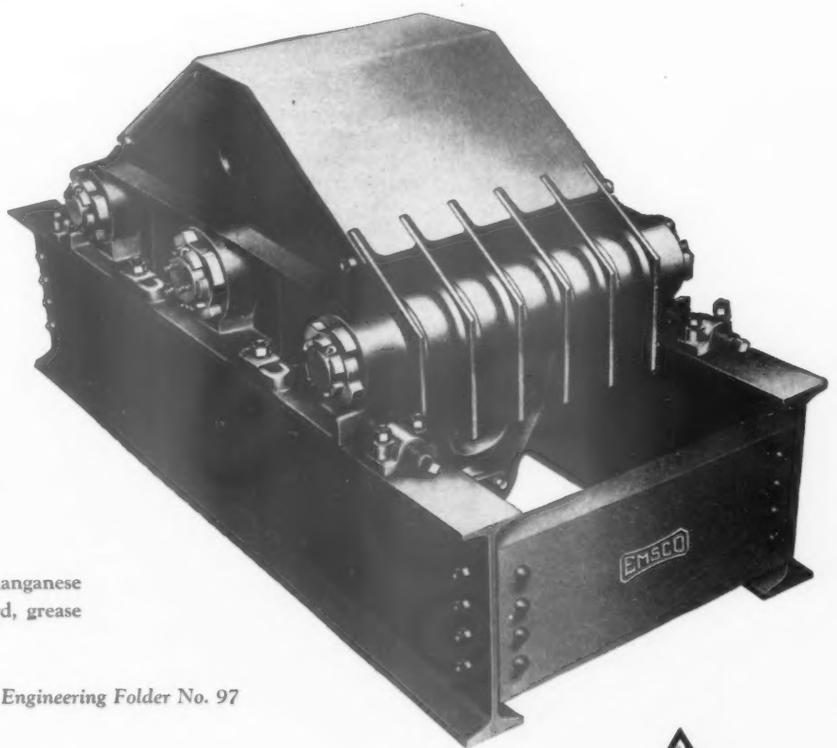

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study of the oil production. A detailed study of subsurface conditions, the casing program, sand formations, and water encroachment problems has to be made carefully. The operating policies of each company in the field are of importance. The drilling program outlined by the companies gives a basis for estimating the future rate of production of both oil and gas from the field. As explained previously, there is a difference between the volume of gas that can actually be recovered from the sand and the volume that can be delivered to the consumers. Cognizance has to be taken of the amount of gas that will be used for fuel and drilling purposes, for gasoline plant shrinkage, and for excess gas that will be produced with the oil that can not be handled by the pipe line facilities of the gas company. All of these factors influence an estimate of the actual producing life of the field.

Availability of Gas

The estimate of the reserves in a gas-producing area forecasts only the total volume of gas that can be recovered from the sand. Such an estimate of total recoverable gas fails to give a clear and definite picture of the availability of the gas in the later producing life of the field and leaves many engineering problems unsolved. For instance, a gas field might be operating at an average rock pressure of 700 pounds per square inch and be able to deliver into the pipe lines under peak load conditions 50,000,000 cubic feet of gas per 24 hours at a back pressure on the wells of 95 per cent of the rock pressure or 665 pounds per square inch. Some of the questions which naturally arise with reference to this field are: What back pressure will likely have to be maintained on the wells to produce this same peak load after the rock pressure has declined to 500 pounds per square inch? When will compressor facilities have to be furnished and what facilities will be needed? What should be the drilling program for future gas wells to maintain a desired rate of delivery at a high back pressure? What is the economic limit as regards the productive life of the field between the number of wells that should be drilled and the installation of pumping facilities in the later life of the field? What factors influence the producing characteristics of individual wells in their later productive life, and how can these influences be detected and remedied? Axiomatically, if these factors and influences are determined for the individual wells of a field, the solution of the problems of the field may be reached.

The natural gas department of the American Gas Association has an open-flow committee working in cooperation with the United States Bureau of Mines on the problem of gauging gas-well capacities. So far, the primary objective of this study has been to find methods of gauging gas-well capacities so as to eliminate the necessity of blowing wells wide open into the atmosphere to obtain open-flow readings. The elimination of this feature of gauging will reduce losses of large quantities of gas, protect gas wells from water encroachment due to "coning" when they are opened wide, protect the sand in the well from caving on changing its characteristics, reduce the hazards of fire and wild wells, and reduce the hazards to employees who have to gauge the large gas wells. It has been found that for dry sand and unconsolidated formations a gauging test can be conducted in the following manner: First, "shut-in" the well and obtain a reading of the shut-in pressure at the well head; then, obtain four or five measurements of the rates of flow of gas from the well at each of the four or five corresponding back pressures. These back pressures should be a high percentage of the shut-in pressure. It is not necessary to reduce the back pressure to less than 80 per cent of the shut-in pressure. After calculating the actual pressure at the sand for each reading, then plot on logarithmic paper the rates of flow as abscissae against the respective differences between the squares of the shut-in pressure at the sand and the rock pressures at the sand face. A straight line can be drawn through the plotted points, which show the characteristics of the flow of gas from the producing sand into the well. This relation in reality is a calibration of the capacity of the sand immediately surrounding a well to deliver gas into that particular well under any conditions of pressure. The depth of penetration, the size of bore, the method of finishing the well, and the character of the sand influence this calibration. If no changes occur in the well, in the sand, or in the character of the gas this relation should be applicable for the producing life of the well.

Conditions Vary

It can thus be seen that the question of gauging gas-well capacities is really more than a study of the measurements of "open flow." Data already have been obtained in the operation of wet gas wells, wells subject to water encroachment, and under other operating conditions which suggest the application of these principles to "check up" on certain wells so as to forecast the deviations from what ordinarily would be expected in the operation of dry gas wells. This was illustrated clearly by a gas well which for two years steadily increased in its water production. Quarterly tests on the well showed that the capacity of the well to deliver gas under a definite set of pressure conditions decreased. The following results were noted:

Difference between the squares of the formation and back pressures	Rates of flow M. cu. ft. per 24 hours
100,000	2,400
100,000	2,350
100,000	2,210
100,000	2,150
100,000	2,010
100,000	1,900

Conditions in gas fields vary, of course, and it can not be expected that the same relation between the rate of flow and the difference of the squares of the formation and back pressure will be strictly applicable at all times in the producing life of a gas well. This is one particular phase of the gas well problem that will be investigated. However, the principle is a basis upon which certain features of a contemplated project can be studied.

It is desirable to operate a gas field with the highest back pressure on the sand as is economically possible. This back pressure on the sand is greater than the inlet pressure to the transmission lines by the amount of pressure due to weight of the column of gas and the friction drop between the sand and the inlet to the pipe line. The capacity of a section of the pipe line, in turn, is approximately proportional to the inlet pressure, provided that the outlet pressure is less than half the inlet pressure. Therefore, operation of gas wells at high back pressures helps the capacities of the pipe lines under peak-load conditions, especially for long distance markets. There is, however, an economic balance between the amount of drilling that should be done in a gas field to maintain a larger availability of gas at higher pressures, and the installation of pumping facilities to increase the pipe line capacities while actually taking gas from the field at lower back pressures. The spacing of gas wells is a problem that needs considerable study. There are few fundamental available data on the subject. It is possible to drill too many wells in a gas-producing area, which would be detrimental to the producing life of the area. Most recommendations are that wells should not be drilled to drain less than a 40-acre productive tract. The Department of Conservation, State of Louisiana, takes the drainage area of wells into consideration in formulating its permissible withdrawal regulations.

The question of drilling and maintaining high back pressures is closely related to the problem of differentiating between pumped and non-pumped gas. The problem is comparatively simple for a market close to a gas field and a simple transmission system. During the earlier life of the field, pumping would be required. The amount of pumping necessary probably would increase as the field grows older, depending upon the drilling program in the field. After the field is drilled up in accordance with the best recommendations of well spacing and the field continues to grow older, more pumping is required to transmit the gas to the market. In such installations it is possible to obtain a fairly reliable estimate of the amount of gas that has to be pumped in a year.

Problem Complicated

This problem becomes much more complicated for some production and transmission systems. A large operating company in order to serve its consumers satisfactorily must maintain a complicated inter-connecting system of transmission lines from numerous gas fields with different producing conditions. Some of the markets are located near sources of supply and some far away from any source of supply. The lines are so constructed that the company is "ready to serve" to con-

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sumers under any operating conditions. In such an installation, the pumping of the gas is separated into two classes: first, the pumping necessary to put the gas into the inlets of the different sections of the transmission system from the gas fields; and second, the compression of the gas in the transmission system to high pressures after the pressure has decreased due to the flow through the pipe lines.

From the standpoint of production, it is customary to classify as "pumped gas" only that gas which has to be compressed to higher pressures to put it into the transmission lines from the fields. It is possible to maintain a fairly accurate record of such gas. However, the gas that is compressed in the transmission system is extremely difficult to record. Weather changes are so sudden at times that the demand might double, and it is then necessary not only to change the operating conditions in the fields but to use the compressors of the pipe lines. This might last only for a limited time. The question of how much gas is actually pumped under such conditions is difficult to answer. In the summer time, when demands on certain sections of the pipe lines are light, compressors on the pipe lines are not necessary and the compressor stations can be by-passed. At the same time, the pressures in certain of the gas fields might be such that pumping at the field would be the best method to provide the necessary pressure at the inlet of the pipe lines, which would eliminate the need of compressors on the main transmission system. This, too, is made possible more easily by so controlling the gas-well production that the most economical back pressure is maintained in the field.

The fluctuations in the quantities of gas that are transmitted through a system of pipe lines are, of course, related to the quantities that have to be produced from the gas fields. When more compressors on the pipe lines are working to increase the total quantity of gas flowing through the pipe lines, more gas necessarily is being produced from the gas fields. If no additional gas wells are used to supply this additional gas, the average inlet pressure to the transmission system is decreased. For practical purposes, the capacities of sections of lines from the gas fields are approximately proportional to the inlet pressures to the lines, provided the discharge pressures on these sections are less than half the inlet pressures. Therefore, if the demand on a transmission system suddenly increases and this additional gas is taken from one field without using any additional gas wells, it is possible for the back pressure on the wells to decrease 20 per cent. This means a decrease of 20 per cent in the capacity of the line from the field which really has to be able to have more gas flow through it. Either of three methods then are utilized to get the gas to the market; first, using more compressors on the transmission system; second, using more wells in the gas field, thus increasing the back pressure on the field and increasing the inlet pressure to the pipe line, which in turn requires less compression on the pipe line than for the first case; and third, actually increasing the pressure at the inlet of the pipe line by pumping between the fields and the pipe line. There are times, of course, when either one, a combination of two, or all three methods have to be used.

Accounting methods necessarily demand that the pumped gas at the field and the compression of the gas in the pipe line system be considered separately, but these items are closely related as far as operations are concerned. The knowledge of the availability of gas from the different wells in the different fields and the study of these availabilities to satisfy operating conditions can influence the operation of the entire gas system. All of the facilities are essential to maintain the highest ability for "readiness to serve," upon which any gas company prides itself. The results of further studies that have been suggested should even increase this readiness.

The presence of water in a gas well decreases the ability of that well to deliver gas under normal operating conditions. This conditions is not limited primarily to small gas wells, as has been thought, but also affects large gas wells. There has been a good deal of agitation by many of the operating companies on the subject of the provision of some method of keeping water away from large producing wells by using back pressure and never opening the well wide so as to allow the water to come in. There are exceptions, of course, where conditions might be such that the operator would want to clean the well by blowing. The studies that have been made of the use of tubing and other methods of eliminating water trouble are to be commended.

Conclusions

Although in this paper the discussion of availability of gas is based upon actual tests of gas wells in a gas field, it is realized that the conditions of operation are more favorable than will be found in other gas fields. The more rapid encroachment of edge water, the variations of actual formation pressure in the same field, the changes in the character of the sand, and other variations cause deviations from any forecasts that can be made. However, with such a basis for reasoning and the application of knowledge obtained through experience, more accurate analysis of field conditions are possible.

It has not been possible, with the present progress of the study of gas-well gauging, to give a complete and detailed discussion of gas field, especially in regard to the availability of gas. The many variations in operating conditions and in the actual fundamental differences in the different fields needs further intensive study. An attempt has been made, however, to bring possibilities that can be considered to the attention of those engaged in the natural gas industry. The open-flow committee of the natural gas department of the American Gas Association now has a problem which, if broadened and studied carefully and intensively, should give valuable information regarding all phases of natural gas production. The fundamentals of actually gauging gas-well capacities not only to determine production under "open flow" conditions but under any conditions of pressures will apply to such problems as the availability of gas, storage of gas in depleted sands, control of gas wells, estimation of gas reserves, and to many other problems that are important in the natural gas industry. With these possibilities this committee should obtain very valuable results by a more intensive study of individual gas wells, gas fields, and gas-producing areas and then coordinating all of these data to form a basis upon which to make general recommendations for general operating conditions.

Large Expenditures to Accompany Natural Gas Developments

(Continued from page 38)

While practically all natural gas producing states were represented by delegates, the meeting really resolved itself into a gathering of Southwestern natural gas men. This was as it should have been, since the Southwest has figured so prominently in the recent developments of the industry, and it is destined to figure even more prominently in the future developments of the industry. Regret was expressed by many, however, over the absence of old time natural gas men from the East, who would undoubtedly have enjoyed participating in the discussions of the problems attending developments in the Southwest.

Considering the magnitude of the new natural gas industry, with its enormous projected development program, it was somewhat surprising to find so small an attendance. It would seem that contemplated expansion of the industry, with the need for a nation-wide hook-up of ideas, would attract a much larger attendance at these annual meetings. One thing apparent is that the representation of the Southwestern natural gas industry is growing each year. Those who have attended the Southwestern meetings during the past few years are fully aware of the forward surge of a newer generation of natural gas men in the Southwest and the ebbing interest being taken by gas men from other sections of the country. Under the circumstances, it is apparent that there is an immediate need for stimulating greater interest in these meetings, in order to draw a representative gathering from every gas producing and consuming state. The natural gas industry is no longer a local affair, as was pointed out by Henry C. Morris, in his opening address, and its national scope should result in an attendance at the annual meetings that would aggregate upwards of 1500 instead of less than 700.

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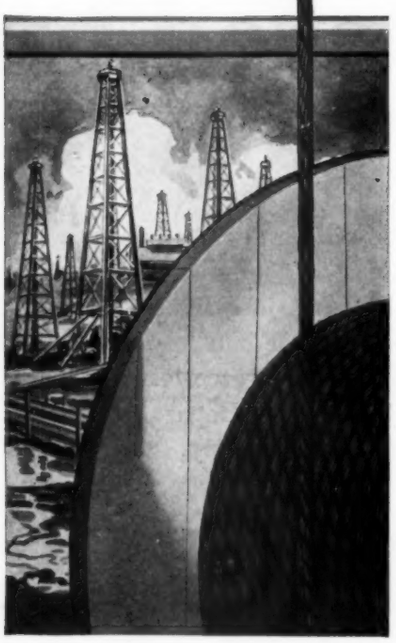

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Markets--Production--Crude Prices

H. J. STRUTH, *Staff Economist, Houston, Texas*

Refined Market Off Pending More Favorable Weather

PRODUCTION of crude oil in the United States was practically unchanged last week, the total showing a net decline of only 50 barrels daily. Changes recorded within the major producing areas were pretty evenly divided; Kansas, Texas, outside of Gulf Coast, Gulf Coast, North Louisiana and California reporting increases while Oklahoma, Arkansas, Eastern States and Rocky Mountain States reported declines.

Producers of the Oklahoma City pool have made their first move toward gaining higher production for the pool. Through Wirt Franklin, chairman of the committee of producers there, a request has been made to C. C. Herndon, chairman of the proration committee of Mid-Continent Oil & Gas Association, a request for a conference of the two committees has been made. The purpose of this conference is to get assurance from pipe line companies that more oil be run from the Oklahoma City pool.*

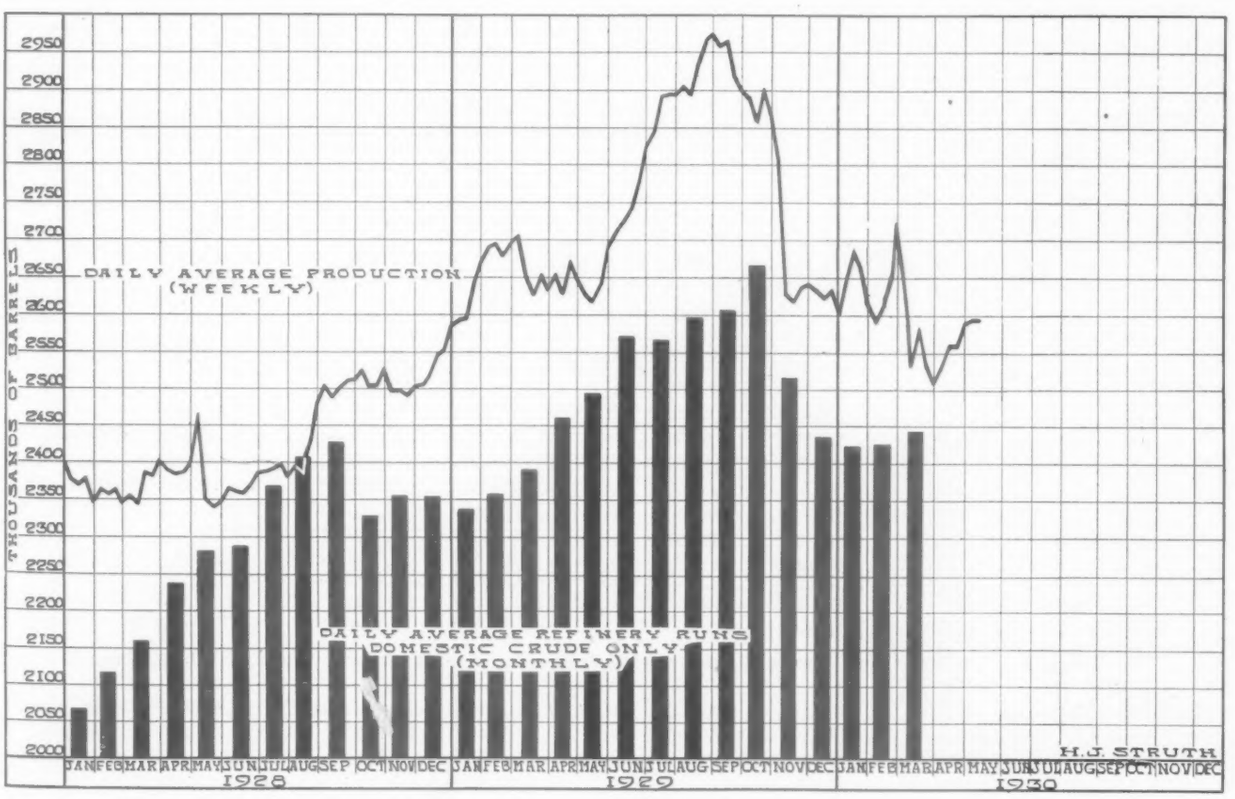
The present proration order of the Oklahoma Corporation Commission gives the Oklahoma City pool allowable output of 25 per cent of potential output. So far, however, actual output has been no higher than 16 2/3 per cent of potential, that being the amount pipe lines can handle.

Now, however, it is maintained by producers of the pool that the carriers can take more oil. Pipe line facilities into the field have not been materially increased but runs from other Oklahoma areas have been falling slightly and it is the belief of Oklahoma City producers that trunk systems will allow the pumping of more oil from there.

This move to increase production from Oklahoma City comes at a time when the output of the Greater Seminole area is dropping. Potentials being taken during May for that area show declines in sev-

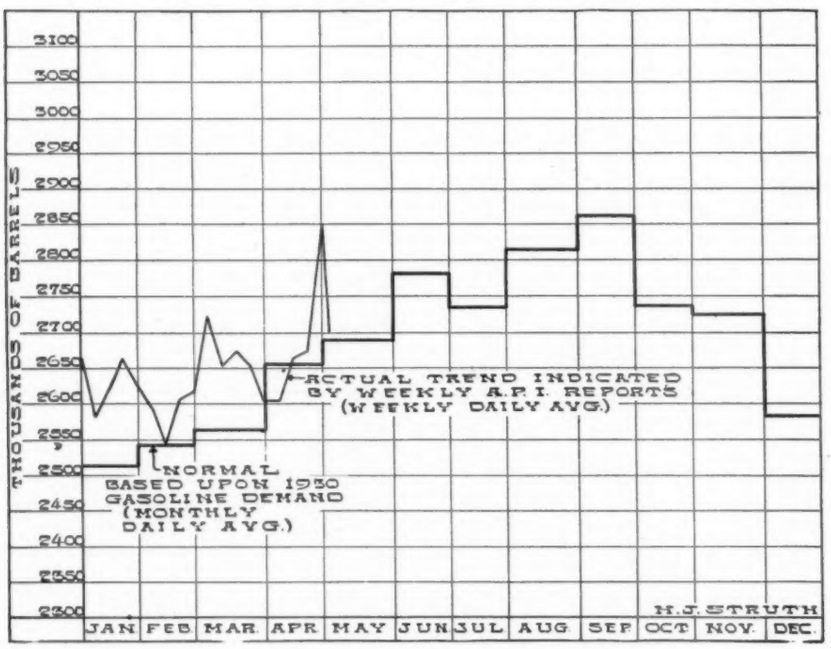
*See page 64.

DOMESTIC PRODUCTION AND REFINERY RUNS



HOW LAST WEEK'S DAILY AVERAGE PRODUCTION COMPARES WITH NECESSARY AND NORMAL QUOTA LIMIT

	Necessary Daily Average 2nd Quarter 1930	Quota Limit Prescribed to Correct Previous Excesses	Actual Daily Average Week Ending May 10, 1930	Excess
Arkansas	69,879	69,879	57,850	—12,029
California	669,791	602,566	634,800	32,234
Kansas	116,044	111,552	127,150	15,598
Louisiana	58,011	50,503	63,250	12,747
Oklahoma	684,274	681,493	653,350	—28,143
Texas	771,384	729,567	846,300	116,733
Balance of U. S.	235,945	235,945	212,500	—23,445
Total	2,605,328	2,481,505	2,595,150	113,645



Status of refinery crude runs situation

eral areas. Potential output of the East Little River area has been placed at 21,906 barrels daily as of May 1, against 25,499 barrels when last taken. East Earlsboro has potential output of 92,846 barrels daily, while the previous figure was 118,060. Under the proration order this pool is allowed one-third of its potential, as actual output, with the provision that production will not be lower than 38,000 barrels daily.

Proration Extended

The proration order on the South Earlsboro field has been extended to June 30, its output being restricted to one-third its potential.

Proration is being applied to prospective producing areas ahead of flush output. Output of the Reiter-Foster et al well in Payne County has been reduced to 300 barrels daily, one-fourth its initial. Similar restriction has been placed on the Continental-Barnsdall-Brown well in Garfield County, which is allowed 185 barrels daily. In the Wanette pool, the one well, owned by Payne Drilling Company and associates will be allowed to flow until another well is completed, when all wells will go on a proration of one-fourth of potential. The Payne well is flowing more than 800 barrels daily.

Present wells in the Chandler area, where deeper drilling is under way, will be allowed to produce until one more well has been completed, when one-fourth of potential will become the allowed output. Drilling restrictions have been adopted for the Chandler area, as well as around the Reiter-Foster well in Payne County. One well will be drilled on each 40 acres, the lease holders alternating in starting wells.

In Kansas the Ritz pool has been given potential production of 10,312 barrels, from 10 wells. This pool is allowed one-half its potential.

According to estimates of current demand in Oklahoma, it is apparent that stocks are being drawn upon to the extent of about 31,000 barrels daily, whereas the accompanying table shows that production

CRUDE RUNS TO STILLS, GASOLINE AND GAS AND FUEL OIL STOCKS, WEEK ENDING MAY 3, 1930

(Figures in barrels of 42 gallons)

District—	Potential Daily Capacity	Potential Capacity Reporting Total	Potential Capacity Reporting Per Cent	Crude Runs to Stills Total	Crude Runs to Stills Daily Average	Crude Runs to Stills Per Cent Operated	Gasoline Stocks	Gas & Fuel Oil Stocks
East Coast	605,700	605,700	100.0	3,470,700	495,800	81.9	9,621,000	6,679,000
Appalachian	128,100	116,600	91.0	618,300	88,400	75.8	1,829,000	762,000
Indiana, Illinois, Kentucky	378,000	376,000	99.5	2,265,300	323,600	86.1	8,589,000	3,626,000
Oklahoma, Kansas, Missouri	462,200	411,700	89.1	2,112,800	301,800	73.3	4,399,000	4,123,000
Texas	788,000	715,700	90.8	3,869,500	552,800	77.2	8,025,000	9,624,000
Louisiana-Arkansas	270,600	262,000	96.8	1,169,700	167,100	63.8	2,664,000	1,942,000
Rocky Mountain	148,900	139,300	93.6	398,500	56,900	40.9	2,817,000	1,097,000
California	897,400	891,400	99.3	4,168,700	595,500	66.8	15,882,000	108,162,000
Total Week May 3	3,678,900	3,518,400	95.6	18,073,500	2,581,900	73.4	53,826,000	136,015,000
Total Week April 26	3,678,900	3,518,400	95.6	18,897,300	2,699,600	76.7	*53,561,000	136,685,000

The Texas and Louisiana Gulf Coastal figures shown below are included in the totals of their respective districts.

Texas Gulf Coast	526,500	526,500	100.0	2,966,600	423,800	80.5	6,948,000	6,984,000
Louisiana Gulf Coast	147,500	147,500	100.0	765,300	109,300	74.1	2,282,000	1,065,000

*Revised due to the omission of 249,000 barrels by an East Coast company in reporting last week's stocks.

FIELD STATISTICS OF IMPORTANT DISTRICTS

Pool—	Oil Wells Completed	Total Initial Production	Initial Per Well	Number Producing Wells	Daily Production Barrels	Daily Prod. Per Well	Rigs Up	Wells Drilling
WEST TEXAS:								
Ector County	26	21,080	811	25	13,060	522	5	26
Hendrick	622	3,117,345	5,012	568	78,390	138[3]	.	2
Church & Fields	218	216,005	991	211	19,385	92	.	1
Gulf-McElroy	86	62,365	725	84	14,195	169	1	1
Yates	382	2,514,855	6,614	370	114,855	310[3]	3	10
TEXAS PANHANDLE:								
Gray County	597	439,105	736	572	68,260	119	19	62
OKLAHOMA:								
Oklahoma City	177[1]	1,621,235	9,103	50	132,824	2,656	54	213
CALIFORNIA:								
Santa Fe Springs[2]	630	1,650,050	2,619	312	122,000	391	8	57

[1]The Oklahoma City pool has 217 completed oil wells and 12 gas wells but only 177 are listed as producers as the remainder are taking shut down time under proration. Only 50 wells were on production the day these figures were compiled.

[2]Includes deep zone production only. For field total add 105 wells and 12,600 barrels.

[3]Production partially pinched.

is about 28,000 barrels a day below the prescribed quota for the state. Kansas production continues to show an excess of more than 15,000 barrels a day.

California Situation Unchanged

The situation in California has shown no material change during recent weeks, although there is some talk of a move to increase production in the leading fields of that state. Those who advocate increased production should consider the fact that it is only the success of efforts to lower production that brought about higher crude prices. Even the slight gains recorded in California during the past few weeks have succeeded in chalking up an excess that now amounts to about 32,000 barrels a day. From this, it is readily seen that continued vigilence is necessary to prevent a recurrence of a top-heavy crude market. If the industry in California can successfully maintain production at present levels for at least another 30 days, it is believed that the crude market will be sufficiently stabilized to permit a substantial increase in field allowances.

Failure to secure complete cooperation at Long Beach and Santa Fe Springs is again threatening the entire curtailment scheme in California, despite an improvement noted in some of the less critical fields and the work of committees to reduce stocks over a long period of time. The wind first blows one way and then the other, and just now is trying to blow the wrong way. Whether the situation is as serious as alarmists paint it is a difficult thing to determine, but abandonment of curtailment would certainly lead to lower crude prices in California.

Santa Fe Springs continues ragged, with two or three operators refusing to abide by terms of the conservation program. Other fields are watching this area and its course will affect other districts which have not been responsible for overproduction. Potential production of the field probably does not exceed 175,000 barrels, but the additional 50,000 barrels of oil it is capable of producing would hurt the crude market, besides causing a larger output from other fields.

Long Beach took a turn for the worse during the week and a virtual challenge

IMPORTS OF PETROLEUM AT PRINCIPAL UNITED STATES PORTS

(Barrels of 42 gallons)

	Total Month April	Total Month March	Week Ended May 3	Week Ended April 26
AT ATLANTIC COAST PORTS—				
Baltimore	942,000	879,000	95,000	433,000
Boston	268,000	119,000	.....	203,000
New York	3,705,000	4,706,000	1,148,000	826,000
Philadelphia	1,213,000	1,136,000	293,000	359,000
Others	583,000	1,082,000	223,000	32,000
Total	6,711,000	7,922,000	1,759,000	1,853,000
Daily Average	223,700	255,548	251,286	264,714
AT GULF COAST PORTS—				
Galveston District	.....	134,000	59,000	.....
New Orleans and Baton Rouge	222,000	361,000	37,000	.....
Port Arthur & Sabine Dist.	73,000	26,000	65,000	.....
Tampa	125,000	75,000	35,000	55,000
Total	420,000	596,000	196,000	55,000
Daily Average	14,000	19,226	28,000	7,857
AT ALL UNITED STATES PORTS—				
Total	7,131,000	8,518,000	1,955,000	1,908,000
Daily Average	237,700	274,774	279,286	272,571
Distribution of Total Imports is as follows:				
Crude	4,622,000	5,617,000	1,284,000	1,402,000
Gasoline	1,073,000	1,279,000	275,000	193,000
Kerosene	40,000	.....	5,000	.....
Gas Oil	117,000	88,000	.....	.....
Fuel Oil	1,279,000	1,534,000	391,000	313,000
Total	7,131,000	8,518,000	1,955,000	1,908,000

CALIFORNIA OIL RECEIPTS AT ATLANTIC AND GULF COAST PORTS

(Barrels of 42 gallons)

	Total Month April	Total Month March	Week Ended May 3	Week Ended April 26
AT ATLANTIC COAST PORTS—				
Baltimore	233,000	327,000	.....	155,000
Boston	.....	95,000	95,000	.....
New York	431,000	895,000	293,000	95,000
Philadelphia	348,000	*296,000	.....	192,000
Others	223,000	697,000	.....	.....
Total	1,235,000	2,310,000	388,000	442,000
Daily Average	41,167	74,516	55,429	63,143
AT GULF COAST PORTS—				
Total	228,000	*91,000	129,000	.....
Daily Average	7,600	2,935	18,428	.....
AT ATLANTIC AND GULF COAST PORTS—				
Total	1,463,000	2,401,000	517,000	442,000
Daily Average	48,767	77,451	73,857	63,143
Distribution of Total California Oil Receipts is as follows:				
Gasoline	1,212,000	*1,582,000	.....	393,000
Kerosene	.....	*205,000	372,000	.....
Gas Oil	222,000	*276,000	50,000	20,000
Fuel Oil	.....	314,000	95,000	.....
Lubricants	29,000	*24,000	.....	29,000
Total	1,463,000	2,401,000	517,000	442,000

*—Revised.

Weekly Comparisons of Permits Granted for New Wells

State—	Week Ending May 10	Previous week	This week 1929	Total this month	This month 1929	Total this year	Total this date last year	1929 year total
Arkansas	...	4	1	4	1	41	47	159
California	12	19	42	31	42	272	519	1,231
Louisiana	25	13	13	38	21	391	286	903
Kansas	13	25	49	38	64	358	347	1,079
Oklahoma	78	87	76	165	159	1,152	1,136	3,578
Texas	176	213	148	389	337	2,875	2,949	8,697
Total	304	361	329	665	624	5,089	5,284	15,647

was made by curtailment leaders to operators refusing to sign the agreement. A meeting was held May 9 but as it was impossible to get all of the required signatures and the time limit extended to May 15. Threats to abandon the entire curtailment program if better cooperation is not forthcoming have been heard and rumors of a price cut are being broadcast.

Abandonment of the scheme to reduce production to 550,000 barrels is expected, with a more concerted effort to be made along the original plans to hold the output to around 609,000 barrels. Over-enthusiastic individuals feel that the output should be lowered so that great inroads can be made into stocks now being carried. An economic committee is now working out a plan which will reduce stocks over a period of two or three years, and at the same time allow the largest possible production. Only a few companies are carrying really excessive stocks, and these are naturally interested in reducing production to a point where stocks will be reduced sharply. Smaller independents are satisfied with the 610,000-barrel mark but frown on further reductions as too drastic.

Production is hovering around 635,000 barrels and resists all efforts to bring it down to the mark set by the Committee of Fifteen.

The retail gasoline situation is again getting bad, with service stations in the Los Angeles basin selling their products at anywhere between 12½ cents and 19½ cents. The recent boost to 19½ cents was not met by some of the larger independent refiners and this commodity has been soft since the supposed end of the price war. Heavy gasoline stocks have been responsible for the continued weakness in gasoline prices.

Crude Prices Unchanged

No immediate change is anticipated in crude prices. A sharp increase in crude production would bring an immediate reduction in prices if it were not for the deplorable state of the gasoline market. Lower crude prices would serve only to make matter worse in this branch of the industry, and would make available larger quantities of cheap gasoline.

California operators in both oil fields and refineries deserve credit for the remarkable change that has been wrought there in so short a time. It would be an act of folly to allow proration efforts to subside and endanger the crude and refined oil market structure. Refinery runs in California have been substantially reduced and are now at a point slightly below actual requirements for manufactured products, particularly gasoline. As the demand for gasoline becomes greater, beginning with the latter part of June and extending through July, August and September, it is believed that runs will necessarily be increased. This will undoubtedly justify increased crude production in California. In the meantime, it is up to proration officials there to exert every effort to acquaint operators with the facts in order that they will realize the necessity for continued control throughout the next 30 days.

The situation in Texas continues to rock along at about the same level. The fact that crude is moving at a fairly good rate seems to have entirely eliminated the thought that there is an economic overproduction in the state. While it may not be generally realized that the demand for Texas crude has been artificially stimulated by low prices, it must be conceded that there is little excuse for processing the large volume of crude that is being consumed by Texas refineries. Sooner or later, it is believed that there will be a slackening in demand from this source that will result in a realization of the need for curtailment.

Refinery runs, as shown by the accompanying chart, have been maintained at a point well above normal since the first of the year. The chart reproduced in last week's issue did not reflect the true situation, as actual runs were figures reported by the American Petroleum Institute,

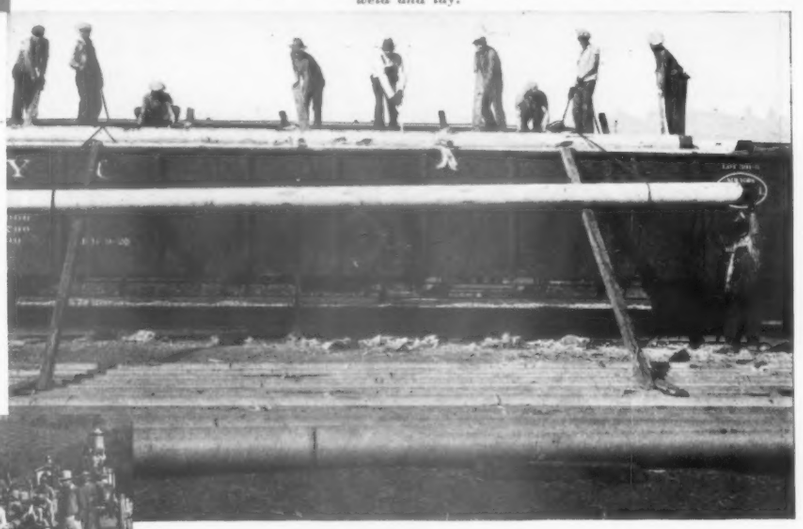
(Continued on page 65)

Summarized Review of Field Results

State—	Completions This week	Completions Last week	Oil Wells This week	Oil Wells Last Week	Gas Wells This week	Gas Wells Last week	Failures This week	Failures Last week	Initial Prod. This week	Initial Prod. Last week
Arkansas	1	6	..	1	1	..	..	5	..	15
California	24	21	23	20	..	..	1	1	13,745	17,590
Illinois	..	7	..	..	..	1	..	6	..	..
Indiana	..	1	..	1	..	..	..	..	..	34
Kansas	18	59	12	42	..	3	6	14	5,200	39,944
Kentucky	42	17	36	12	..	1	6	4	856	313
Louisiana	19	27	7	10	6	7	6	10	792	5,657
Michigan	..	5	..	3	..	1	..	1	..	485
Mississippi	..	1	..	..	..	1	..	..	..	..
Ohio	46	37	21	14	11	16	14	7	571	396
Oklahoma	62	107	36	67	6	13	20	27	112,659	108,708
Pennsylvania	3	6	2	..	..	5	1	1	8	..
Texas	156	151	77	88	4	15	75	48	37,282	40,260
West Virginia	16	20	9	6	4	12	3	2	63	77
Total	387	465	223	264	32	75	132	126	171,176	213,479
Increase this week	...	...	...	..	..	..	6	..	..	..
Decrease this week	78	...	41	..	43	..	..	..	42,303	..

PIPE mechanically coated and wrapped at the mill is the best insurance against CORROSION

Unloading pipe that has been mechanically coated and wrapped at the mill. Pipe is ready to weld and lay.



Welding 10-inch pipe which has been mechanically coated and wrapped at the mill.

FIELD application of protective coatings lacks practically all of the many advantages now offered by the Hill, Hubbell & Company Process of mechanically coating and wrapping the pipe on the spot where the pipe is made — at the mill. This process thoroughly cleans the pipe of all rust and mill scale — which can be done but partially, if at all, in the field. In mill coating the pipe is not only thoroughly dry but warm when the primer is put on. In the field the pipe is cold. At the mill the *two thick* coats of Biturine are applied before the felt is put on, thus preventing pin holes and bubbles. The felt coating is then applied under high tension evenly and perfectly spaced. In the field, when felt is applied, the process is faulty at best. Moreover, at the mill the entire process is mechanical, entirely eliminating the human factor. It can proceed day and night under one roof, under exact conditions of temperature, regardless of weather conditions.

This outstanding contribution by the laboratories and field staff of Hill, Hubbell & Company is the greatest protective development for pipe lines of the past quarter century. It means untold millions of dollars saved in reconditioning costs which are reflected in dividends to the investors.

Plants for the mechanical coating and wrapping of pipe are located in the following cities for the production of the pipe manufacturers listed:

Location	*For production of*
Ambridge, Pa.	Central Tube Company
Ambridge, Pa.	Spang-Chalfant & Company
Indiana Harbor, Ind.	Youngstown Sheet & Tube Co.
Lorain, Ohio	National Tube Company
Milwaukee, Wis.	A. O. Smith Corporation
Youngstown, Ohio	Youngstown Sheet & Tube Co.

BITURINE COATINGS

Biturine Enamel — Biturine Solution No. 5
Biturine Enamel Primer — Biturine 70-30
Biturine Coupling Mixture

This group of protective coatings represents the fruits of more than 20 years of careful research and practical experience. Biturine Enamel and Primer are particularly adapted to the Hill, Hubbell & Company Process of mechanically applying protective coating to the pipe at the mill.

Literature describing the process and giving full details about specifications covering a wide range of combinations and materials will be gladly supplied by our nearest office.

GENERAL PAINT CORPORATION

HILL, HUBBELL & COMPANY DIVISION

PAINTS VARNISHES LACQUERS

Specialists in the science of protective coatings for all industry

Chicago, New York, Tulsa, Houston, Dallas, San Francisco, Oakland, Los Angeles, Portland, Seattle, Spokane

Export Offices: 11 Broadway, New York, N. Y., U. S. A.
160 Fremont Street, San Francisco, Calif., U. S. A.

Here, motorists don't just "buy gas" ...they *Select* their motor-fuel... they get THREE-GAS SERVICE!

Keeping pace with motoring developments, Sinclair offers three different gasolines that give three different engine performances. Every motorist can select the gasoline that's just right for his own engine and his own driving habits!

To those who want quick-starting, zooming getaway, flashy action in traffic and brilliant performance on the road...here's Sinclair Aircraft Gasoline. It is the *Ace* of high test gasolines because it is specially manufactured at Sinclair Refineries, meeting the requirements of the Federal Specifications Board for Aviation Gasoline—domestic grade—and gives sustained power. Due to its careful fractionation it is free from dissolved gases which cause gas locks, uneven distribution, galloping and engine balk.

For those who want high compression and better low gear performance, with a complete absence of knocks, even on a long hill...here's Sinclair H-C Gasoline. It's *all* gasoline—nothing added.

And for those who prefer to pay three cents less per gallon, here's Sinclair Regular Gasoline, full of eager power—great for economy and mileage...The quality gasoline at a popular price!...Try the progressive way to sell gasoline. Sinclair Three-Gas Service...the sure way to increase your volume.

SINCLAIR REFINING COMPANY, INC.,
45 Nassau Street, New York
Atlanta *Chicago* *Houston* *Kansas City*

CRUDE OIL PRICE QUOTATIONS

(Revised to May 13)

CHANGES

Effective May 1, Joseph Seep Purchasing Agency reduced all Pennsylvania grades 25 cents per barrel, and on the following day the same purchaser advanced Corning grade 10 cents per barrel to $1.75.

EASTERN STATES

(Effective May 1, 1930)

Penna Grade Oil in New York Transit Lines (New York)	$2.55
Bradford District Oil in National Transit Lines (Pennsylvania)	2.55
Penn Grade Oil in National Transit Lines (Pennsylvania)	2.55
Penn Grade Oil in Southwest Pennsylvania Lines (Penna.)	2.50
Penn Grade Oil in Eureka Pipe Line Lines (West Virginia)	2.40
Penna Grade Oil in Buckeye Pipe Line Lines (Ohio)	2.20
Cabell Grade Oil in Eureka Pipe Line Lines (West Virginia)	1.75
Corning 35-cent Grade Oil in Buckeye Pipe Line Co.'s Lines	1.55
Corning 25-cent Grade Oil in Buckeye Pipe Line Co.'s lines	1.75
Somerset Oil in Cumberland Pipe Line lines (Kentucky)	1.37
Ragland Grade Oil in Cumberland Pipe Line lines (Kentucky) (Effective Jan. 29, 1929)	.60
Wayne Dist. Oil in Cumberland Pipe Lines	1.24

CENTRAL STATES

(Effective April 11, 1930)
Posted by Ohio Oil Co.

Illinois	$1.65
Indiana	1.47
Lima	1.70
Plymouth	1.23
Princeton	1.65
Wooster	1.80

WESTERN KENTUCKY

All grades	1.55

OKLAHOMA-KANSAS

(Effective April 10, 1930)

Below 25 gravity	$ .70
25 to 25.9 gravity	.70
26 to 26.9 gravity	.76
27 to 27.9 gravity	.82
28 to 28.9 gravity	.88
29 to 29.9 gravity	.95
30 to 30.9 gravity	1.02
31 to 31.9 gravity	1.10
32 to 32.9 gravity	1.15
33 to 33.9 gravity	1.185
34 to 34.9 gravity	1.22
35 to 35.9 gravity	1.255
36 to 36.9 gravity	1.29
37 to 37.9 gravity	1.325
38 to 38.9 gravity	1.36
39 to 39.9 gravity	1.395
40 to 40.9 gravity	1.43
41 to 41.9 gravity	1.465
42 to 42.9 gravity	1.50
43 to 43.9 gravity	1.535
44 and above	1.57

PANHANDLE

(Effective April 10, 1930)

GRAY COUNTY

Below 29 gravity	.755
29 to 29.9 gravity	.805
30 to 30.9 gravity	.855
31 to 31.9 gravity	.905
32 to 32.9 gravity	.955
33 to 33.9 gravity	1.005
34 to 34.9 gravity	1.055
35 to 35.9 gravity	1.09
36 to 36.9 gravity	1.125
37 to 37.9 gravity	1.16
38 to 38.9 gravity	1.195
39 to 39.9 gravity	1.23
40 to 40.9 gravity	1.265
41 to 41.9 gravity	1.30
42 to 42.9 gravity	1.335
43 to 43.9 gravity	1.37
44 and above	1.405

CARSON-HUTCHINSON COUNTIES

Below 32 gravity	$ .775
32 to 32.9 gravity	.825
33 to 33.9 gravity	.875
34 to 34.9 gravity	.925
35 to 35.9 gravity	.96
36 to 36.9 gravity	.995
37 to 37.9 gravity	1.03
38 to 38.9 gravity	1.065
39 to 39.9 gravity	1.10
40 to 40.9 gravity	1.135
41 to 41.9 gravity	1.17
42 to 42.9 gravity	1.205
43 to 43.9 gravity	1.24
44 and above	1.275

WHEELER COUNTY

Below 30 gravity	$ .755
30 to 30.9 gravity	.805
31 to 31.9 gravity	.855
32 to 32.9 gravity	.905
33 to 33.9 gravity	.955
34 to 34.9 gravity	1.005
35 to 35.9 gravity	.104
36 to 36.9 gravity	1.075
37 to 37.9 gravity	.111
38 to 38.9 gravity	1.145
39 to 39.9 gravity	.118
40 to 40.9 gravity	1.215
41 to 41.9 gravity	.125
42 to 42.9 gravity	1.285
43 to 43.9 gravity	.132
44 and above	1.355

WEST TEXAS

(Effective April 10, 1930)

Crane-Upton, Crockett, Ector, Howard, Pecos and Winkler Counties and Lea County, N. Mex.

Below 25 gravity	$ .65
25 to 25.9 gravity	.68
26 to 26.9 gravity	.71
27 to 27.9 gravity	.74
28 to 28.9 gravity	.77
29 to 29.9 gravity	.80
30 to 30.9 gravity	.83
31 to 31.9 gravity	.86
32 to 32.9 gravity	.89
33 to 33.9 gravity	.92
34 to 34.9 gravity	.95
35 to 35.9 gravity	.98
36 and above	1.01

Magnolia Petroleum Company posts in Crane, Upton and Winkler Counties. Southern Crude Oil Purchasing Company posts only in Crane, Upton and Winkler Counties.

CALIFORNIA CRUDE OIL PRICES AT THE WELL

(EFFECTIVE MARCH 11, 1930)

Following are the current prices offered by Standard Oil Company for crude oil at the wells: (Price per barrel of 42 gallons in fields indicated).

Gravity	Ventura*	Signal Hill	Alamitos Heights Seal Beach	Huntington Beach	Inglewood	Olinda-Brea Canon	Athens-Rosecrans Dominguez	Elwood Terrace	Torrance	Richfield	Whittier La Habra	Montebello	Coyote Hills	Santa Fe Springs	Newhall McKittrick Kern River	Midway-Sunset Elk Hills	Buena Vista Hills	Lost Hills	Coalinga	Wheeler Ridge
14-14.9	$ .70	$ .70	$ .70	$ .70	$ .70	$ .70	$ ..	$ ..	$ .70	$ .70	$ .70	$ .70	$ .70	..	$ .55	$ .55	$ .55	$ .55	$ .55	$ .55
15-15.9	.70	.70	.70	.70	.70	.70	..	..	.70	.70	.70	.70	.70	..	.55	.55	.55	.55	.55	.55
16-16.9	.70	.70	.70	.70	.70	.70	..	..	.70	.70	.70	.70	.70	..	.55	.55	.55	.55	.55	.55
17-17.9	.70	.70	.70	.70	.70	.70	..	..	.70	.70	.70	.70	.70	..	.55	.55	.55	.55	.55	.55
18-18.9	.75	.76	.76	.76	.76	.76	..	..	.76	.76	.76	.71	.76	..	.55	.62	.62	.62	.62	.62
19-19.9	.80	.82	.82	.82	.82	.82	..	..	.82	.82	.82	.77	.82	..	.55	.70	.70	.70	.70	.70
20-20.9	.85	.88	.88	.88	.88	.88	..	..	.88	.88	.87	.83	.87	..	..	.78	.78	.78	.78	.78
21-21.9	.90	.94	.94	.94	.94	.94	..	..	.94	.94	.93	.90	.93	.92	..	.86	.86	.86	.86	.86
22-22.9	.97	1.00	1.00	1.00	1.00	1.00	..	..	1.00	1.00	.98	.97	.98	.95	..	.94	.94	.94	.94	.94
23-23.9	1.05	1.07	1.07	1.07	1.07	1.07	..	..	1.07	1.07	..	1.05	1.04	1.01	..	1.02	1.02	1.02	1.02	1.02
24-24.9	1.08	1.14	1.14	1.14	1.14	1.14	1.14	..	1.14	1.14	..	1.11	1.10	1.07	..	1.09	1.09	1.09	1.07	1.07
25-25.9	1.13	1.21	1.21	1.21	1.21	1.21	1.19	..	1.21	1.21	..	1.17	1.16	1.13	..	1.16	1.16	1.16	1.12	1.12
26-26.9	1.18	1.28	1.28	1.28	1.28	1.28	1.24	..	1.28	1.28	..	1.23	1.23	1.19	..	1.23	1.23	1.23	1.17	1.17
27-27.9	1.23	1.35	1.35	1.35	1.35	1.35	1.29	..	1.35	1.35	..	1.29	1.30	1.25	..	1.30	1.30	1.30	1.23	1.22
28-28.9	1.28	1.42	1.42	1.42	1.42	1.42	1.34	..	1.42	1.42	..	1.35	1.37	1.31	..	1.35	1.35	1.35	1.27	..
29-29.9	1.33	1.46	1.46	1.46	..	1.46	1.39	..	..	1.46	..	1.38	1.41	1.37	..	1.41	1.41	1.41	1.31	..
30-30.9	1.39	1.50	1.50	1.50	..	1.50	1.45	..	..	1.50	..	1.41	1.45	1.43	..	1.47	1.47	1.47	1.35	..
31-31.9	1.45	1.55	1.55	1.55	..	1.55	1.51	..	..	..	..	..	..	1.49	..	1.53	1.53	1.53	1.39	..
32-32.9	1.51	1.60	1.60	1.60	..	..	1.57	..	..	..	..	..	..	1.55	..	1.59	1.59	1.59	1.43	..
33-33.9	1.58	..	..	..	..	..	1.64	..	..	..	..	..	..	1.60	..	1.65	1.65	1.65	1.47	..
34-34.9	..	..	..	..	..	..	1.71	1.32	..	..	..	..	..	1.65	..	..	..	1.71	1.51	..
35-35.9	..	..	..	..	..	..	1.78	1.39	..	..	..	..	..	1.70	..	..	..	1.77	1.55	..
36-36.9	..	..	..	..	..	..	1.84	1.46	..	..	..	..	..	1.75	..	..	..	..	..	..
37-37.9	..	..	..	..	..	..	1.90	1.53	..	..	..	..	..	1.80	..	..	..	..	..	..
38-38.9	..	..	..	..	..	..	1.96	1.60	..	..	..	..	..	1.85	..	..	..	..	..	..
39-39.9	..	..	..	..	..	..	2.02	1.66	..	..	..	..	..	1.90	..	..	..	..	..	..
40-40.9	..	..	..	..	..	..	2.08	1.72	..											
41-41.9	..	..	..	..	..	..	2.14	1.78	..											
42-42.9	..	..	..	..	..	..	2.20	1.84	..											

KETTLEMAN HILLS—55 degrees Gravity and above $1.65 per barrel. *Union Oil Company.

General Petroleum Posts following prices 11-13.9 Gr. 50c, 14-22.9 55c at Kern Front, Fruitvale, Mt. Poso Creek and Rd. Mountain districts.

(See page 58)

CRUDE OIL PRICE QUOTATIONS (*Continued from Page 57*)

HOWARD AND GLASSCOCK COUNTY CRUDE

(Effective April 10, 1930)

Below 25 gravity	$ .65
25 to 25.9 gravity	.68
26 to 26.9 gravity	.71
27 to 27.9 gravity	.74
28 to 28.9 gravity	.76
29 to 29.9 gravity	.78
30 to 30.9 gravity	.80
31 to 31.9 gravity	.82
32 to 32.9 gravity	.84
33 to 33.9 gravity	.86
34 to 34.9 gravity	.88
35 to 35.9 gravity	.90
36 and above	.92

MARKHAM

The Texas Company

(Effective April 11, 1930)

All grades	$ .85

CORSICANA HEAVY

All grades	$ .80

SALT FLAT AND DARST CREEK

All grades	$1.15

SOUTH TEXAS

Mirando	$ .85
Luling	.85

NORTH AND CENTRAL TEXAS

(Effective April 10, 1930)

Ranger, North Texas, Mexia, Powell, Richland, Wortham, Currie, Moran, Nocona and Lytton Springs Crude

Below 25 gravity	$ .72
25 to 25.9 gravity	.77
26 to 26.9 gravity	.82
27 to 27.9 gravity	.87
28 to 28.9 gravity	.92
29 to 29.9 gravity	.97
30 to 30.9 gravity	1.02
31 to 31.9 gravity	1.07
32 to 32.9 gravity	1.12
33 to 33.9 gravity	1.17
34 to 34.9 gravity	1.22
35 to 35.9 gravity	1.225
36 to 36.9 gravity	1.29
37 to 37.9 gravity	1.325
38 to 38.9 gravity	1.36
39 to 39.9 gravity	1.395
40 to 40.9 gravity	1.43
41 to 41.9 gravity	1.465
42 to 42.9 gravity	1.50
43 to 43.9 gravity	1.535
44 and above	1.57

GULF COAST

(Effective April 10, 1930)

Grade "A" all companies	$1.15

Grade "B"

Below 25 gravity	$1.00
25 to 25.9 gravity	1.03
26 to 26.9 gravity	1.06
27 to 27.9 gravity	1.09
28 to 28.9 gravity	1.12
29 to 29.9 gravity	1.15
30 to 30.9 gravity	1.18
31 to 31.9 gravity	1.21
32 to 32.9 gravity	1.24
33 to 33.9 gravity	1.27
34 to 34.9 gravity	1.30
35 to 35.9 gravity	1.33
36 to 36.9 gravity	1.36
37 to 37.9 gravity	1.39

CLASSIFICATIONS OF GULF COAST CRUDE

The Texas Company: GRADE A—Beaume gravity not over 26.0 degrees at 60 degrees Fahrenheit; sulphur not over 0.5 per cent; in distilling 500 cc. of the crude that part of the distillate cut between 65 per cent off and 85 per cent off shall have a pour test of zero or lower. GRADE B—All Gulf Coast heavy crudes which do not meet tests for Grade "A" or for Gulf Coast light.

Humble Oil & Refining Company: GRADE A—All crude conforming to the following tests: viscosity not less than 100 seconds Saybolt at 100 degrees Fahrenheit; sulphur not over .4 per cent; Beaume gravity not over 25 at 60 degrees Fahrenheit. Cold tests of distillates having a viscosity of 1000 seconds at 100 degrees Fahrenheit shall not be over 5 degrees Fahrenheit. GRADE B—Embraces all Coastal crude which does not meet the tests for "A" grade crude.

Gulf Pipe Line Company: GRADE A—Beaume gravity not over 24 at 60 degrees Fahrenheit; viscosity not less than 100 seconds universal Saybolt at 100 degrees Fahrenheit; and sulphur not over 0.4 per cent. The yield of 250 viscosity reduced distillate at 100 degrees Fahrenheit not less than 30 per cent, and this 30 per cent not heavier than 20 Beaume, and its pour test not above zero Fahrenheit. The reduced distillate to be secured by reducing the crude with fire and steam until the bottoms have a flash of not less than 540 degrees Fahrenheit, and not more than 560 degrees Fahrenheit open cup, and the entire distillate obtained in this way reduced to a distillate of 250 viscosity. The 10 per cent cut in the original distillate having an average viscosity of 500 seconds at 100 degrees Fahrenheit to have a pour test not higher than 5 degrees Fahrenheit. GRADE B—Embraces crude which does not meet test for "A" grade.

Sun Pipe Line Company: GRADE A—Viscosity not less than 100 seconds at 100 degrees Fahrenheit Saybolt. Sulphur not over .4 per cent. Beaume gravity not over 25 at 60 degrees Fahrenheit. Cold Test: of distillates having viscosity of 1000 seconds at 100 degrees Fahrenheit shall not be over 5 degrees Fahrenheit A. S. T. M. Method. GRADE B—All Coastal crudes which do not meet specifications for Grade A crude.

38 to 38.9 gravity	1.42
39 to 39.9 gravity	1.44
40 to 40.9 gravity	1.46
41 to 41.9 gravity	1.48
42 to 42.9 gravity	1.50
43 to 43.9 gravity	1.52
44 and above	1.54

REFUGIO

(Effective April 10. 1930)

Below 25 gravity (Heavy)	.85

REFUGIO (Light)

Same as Gulf Coast 25 gravity and above.

PETTUS

(Effective April 10. 1930)

All grades	$1.40

BRENHAM

(Effective March 1, 1930)

All grades	.95

STATE CRUDE PRODUCTION TAXES

Oklahoma—Three per cent of gross value, less royalty interest.

Texas—Two per cent of gross value.

Louisiana—From four to 11 cents a barrel, depending upon gravity.

Arkansas—2.6 per cent of gross market value.

Montana—Two per cent of gross value at well.

Wyoming and New Mexico—production tax based upon state and county assessments.

California—.66443 mills per barrel of oil produced and 17.39 cents per acre on proved oil lands.

WYOMING-MONTANA

(Effective April 11, 1930)

Wyoming

Byron	$1.33
Ferris	1.60
Elk Basin	1.55
Grass Creek	1.55
Rock Creek	1.35
Lost Soldier	1.05
Lance Creek	1.63
Mule Creek	1.20
Notches	.65
Big Muddy	1.38
Osage	1.65
Hamilton Dome	.85
Filot Butte	1.75
Torchlight-Greybull	1.65
Lander	.80
Rex Lake	1.10
South Casper Creek-Poison Spider	1.00

SALT CREEK

Midwest Refining Company

29 to 29.9 gravity	$ .90
30 to 30.9 gravity	.96
31 to 31.9 gravity	1.02
32 to 32.9 gravity	1.08
33 to 33.9 gravity	1.11
34 to 34.9 gravity	1.14
35 to 35.9 gravity	1.17
36 to 36.9 gravity	1.20
37 and above	1.23

MONTANA

(Effective Feb. 15, 1930)

Sunburst	$1.65
Cat Creek	1.48
Lake Basin	2.20

NEW MEXICO

(Effective April 11, 1930)

Artesia	1.05
Hog Back	1.43
Maljamar	.95
Jal and Lea	*

(*) West Texas price scale used by The Texas Company and Humble Oil & Refining Co.

CANADA

(Effective April 11, 1930)

Oil Springs	2.17
Petrolia	2.10

LOUISIANA-ARKANSAS

(Effective April 11, 1930)

Homer, Haynesville, Caddo, El Dorado, De-Soto and Crichton and Cotton Valley*

Below 28 gravity	$ .87
28 to 28.9 gravity	.92
29 to 29.9 gravity	.97
30 to 30.9 gravity	1.02
31 to 31.9 gravity	1.07
32 to 32.9 gravity	1.12
33 to 33.9 gravity	1.17
34 to 34.9 gravity	1.22
35 to 35.9 gravity	1.255
36 to 36.9 gravity	1.29
37 to 37.9 gravity	1.325
38 to 38.9 gravity	1.36
39 to 39.9 gravity	1.395
40 to 40.9 gravity	1.43
41 to 41.9 gravity	1.465
42 to 42.9 gravity	1.50
43 to 43.9 gravity	1.535
44 gravity and above	1.57

*Shreveport-Eldorado's postings stop at above 40 gravity.

The posting on Cotton Valley is same as Caddo. From 36 to 52 and above the regular gravity schedule is followed.

The Texas Company pays North Texas gravity scale in North Louisiana.

STEPHENS

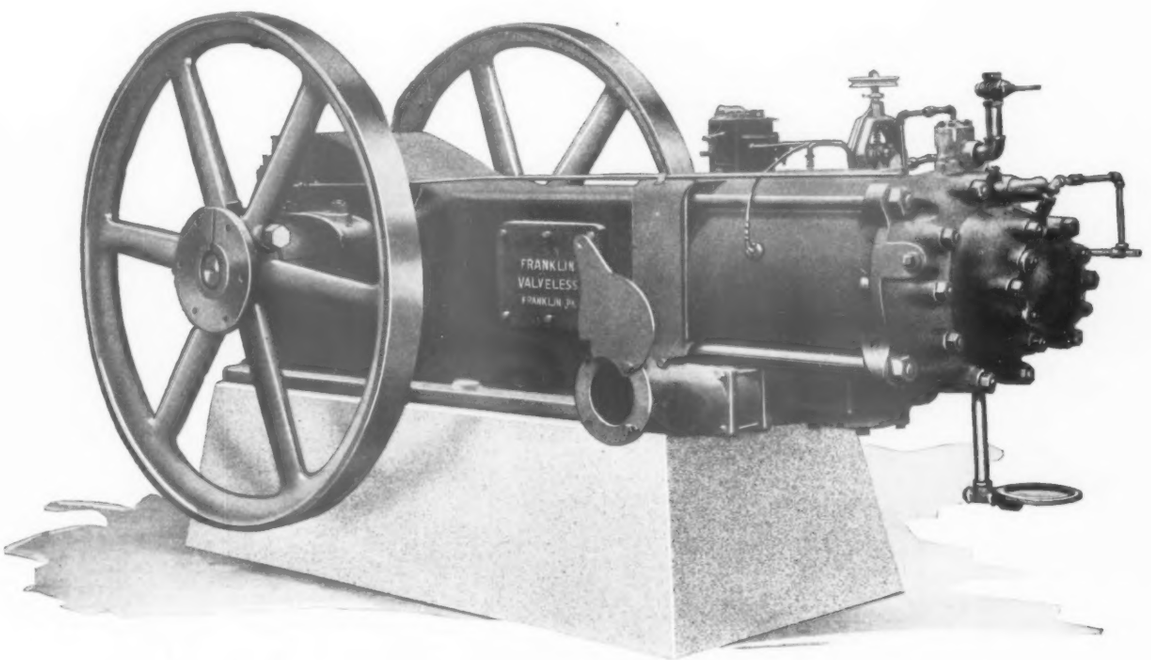
Below 28 gravity	$ .76
28 to 28.9 gravity	.81
29 to 29.9 gravity	.86
30 to 30.9 gravity	.91
31 to 31.9 gravity	.96
32 gravity and above	1.01

SMACKOVER

Below 24 gravity	$ .90
24 and above	1.05

The Franklin Valveless Oil Drilling Engine is not only a fine drilling engine but it is also the ONLY PUMPING ENGINE for use where gas has failed . . .

In fields where the gas supply is failing owners of Franklin Valveless O. F. Oil Drilling Engines do not worry — for they know the O. F. makes the finest of pumping engines — using oil as a fuel. Extra strength is inbuilt in the O. F. — investigate it.



Franklin Valveless Engine Company

Franklin, Pennsylvania

Distributed by

OIL WELL SUPPLY CO.

United States Daily Average Production

Figures below are taken from the complete revised estimates of the AMERICAN PETROLEUM INSTITUTE except for the current week, which are advance estimates issued by the A. P. I. and are subject to revision:

1929	Oklahoma	Kansas	Texas (Outside Gulf Coast)	Gulf Coast	North Louisiana	Arkansas	Eastern States	Rocky Mountain	California	United States Daily Av.	United States Total
March	666,500	95,500	662,500	147,750	35,800	74,250	108,850	70,400	786,000	2,647,400	82,068,350
April	665,600	106,400	650,100	154,550	35,550	72,900	110,850	69,400	781,350	2,646,700	79,402,100
May	679,650	115,400	651,100	150,350	35,350	71,500	114,150	72,850	749,250	2,639,600	81,827,600
June	685,200	120,750	688,200	147,500	35,700	70,050	116,750	72,000	827,200	2,763,400	82,902,250
July	722,050	124,250	718,950	148,150	35,750	68,650	122,000	74,250	874,850	2,888,900	89,555,250
August	728,100	127,950	750,750	153,100	36,300	66,900	126,600	77,900	873,300	2,940,900	91,167,250
September	714,050	128,450	741,200	156,600	37,050	65,300	137,250	78,600	874,850	2,933,350	88,000,650
October	673,600	113,400	714,550	167,050	39,700	64,550	137,400	77,950	876,600	2,864,800	88,809,500
November	640,300	110,050	702,350	171,350	36,750	63,700	135,400	76,550	706,500	2,642,800	79,285,050
December	650,000	111,600	687,850	161,350	38,700	61,850	140,650	76,150	698,200	2,626,350	81,417,000
1930											
January	671,050	111,700	672,650	178,300	37,650	58,500	142,250	73,850	688,850	2,634,800	81,574,650
February	631,900	111,400	654,600	199,950	39,450	58,400	135,050	74,850	746,550	2,652,150	74,280,200
March	622,650	115,500	644,400	206,000	41,600	58,600	132,700	73,600	649,000	2,544,050	78,865,400
April*	657,450	121,950	639,750	207,150	42,250	57,750	138,900	75,600	625,400	2,566,200	76,988,700
May 3	658,800	125,450	661,200	201,100	40,900	58,050	139,400	77,200	633,100	2,595,200	18,166,400
May 10	653,350	127,150	663,250	205,150	41,150	57,050	138,200	74,250	634,800	2,595,150	18,166,050
Increase		1,700	2,050	4,050	250				1,700		
Decrease	5,450					200	1,200	2,950		50	350

*Preliminary Figures.

TEXAS
(Outside Gulf Coast)
PANHANDLE DISTRICT

	May 10	May 3
Carson County	9,000	9,100
Gray County	68,250	70,900
Hutchinson County	24,300	22,150
Wheeler County	900	900
Others	400	500
Total	102,850	103,550

NORTH TEXAS

Archer County	18,550	18,100
Burkburnett	8,300	8,300
Electra	11,100	11,100
Iowa Park-KMA	5,700	5,700
Montague and Cooke Counties	10,500	10,600
Wilbarger	24,050	24,100
Others	1,900	2,000
Total	80,100	79,900

WEST CENTRAL TEXAS

Brown County	7,600	7,600
Callahan County	4,000	3,600
Coleman County	4,200	4,600
Eastland Desdemona	5,500	5,500
Jack County	4,100	4,100
Palo Pinto County	650	700
Shackelford County	6,650	6,550
Stephens County	6,150	5,850
Throckmorton County	1,150	800
Young County	18,800	18,550
Others	1,150	1,400
Total	59,950	59,250

WEST TEXAS

Ector	14,100	13,500
Crane-Upton Counties	44,300	42,000
Crockett County	2,000	2,000
Howard County	38,000	39,050
Jones County	1,400	2,100
Mitchell-Scurry Counties	2,250	2,100
Yates	113,500	115,000
Pecos County	4,800	4,600
Reagan County	16,400	16,600
Winkler County	77,800	78,450
Others	2,800	29,050
Total	317,350	318,300

EAST CENTRAL TEXAS

Boggy Creek	3,600	3,700
Corsicana-Powell	6,100	6,000
Currie	300	300
Mexia	4,300	4,250
Nigger Creek	200	200
Richland	250	250
Wortham	900	900
Van Zandt	23,500	21,100
Total	39,150	36,700

SOUTHWEST TEXAS

Darst Creek	19,750	20,000
Dale	300	300
Laredo District	8,200	8,300
Luling	9,500	9,650
Lytton Springs	850	850
Somerset	1,200	1,300
Salt Flat	22,300	21,250
Others	1,750	1,850
Total	63,850	63,500
T'tl Tex. (outside Gulf Coast)	663,250	661,200

TEXAS GULF COAST

Esperson	3,450	2,800
Barbers Hill	18,200	19,600
Batson	1,100	1,200
Big Creek	4,300	4,400
Blue Ridge	2,100	2,100
Boling	1,050	1,100
Damond Mound	600	600
Goose Creek	4,500	4,400
Hull	10,100	9,300
Humble	18,800	19,800
Orange County	2,350	2,350
Pierce Junction	9,350	9,050
Refugio	38,850	37,800
Raccoon Bend	12,000	10,100
Saratoga	1,100	1,000
Sour Lake	2,350	2,200
South Liberty	4,600	4,700
Spindle Top	16,200	17,100
Sugar Land	11,850	10,200
West Columbia	5,600	5,750
Washington County	1,600	1,700
Fannett	1,350	1,150
Port Neches	1,600	1,650
North Dayton	550	650
Others	9,500	8,300
Total	183,050	179,000
Texas Total	846,300	840,200

OKLAHOMA

Asher	1,950	2,050
Carr City	9,900	8,700
Logan County	5,700	7,000
Braman	3,500	3,500
Blackwell	3,700	3,300
Hubbard	1,600	1,600
Thomas	650	700
Tonkawa	7,800	7,800
Garber	4,750	4,750
Burbank	16,500	16,600
Osage (outside Burbank)	25,100	26,200
Cushing	13,900	14,000
Yale Jennings	8,600	8,600
Davenport	1,150	1,200
Bristow Slick	16,050	16,150
North Okmulgee	10,450	10,600
South Okmulgee	6,250	6,300
Cromwell	7,600	7,600
Papoose	2,850	2,850
Wewoka	3,700	3,700
Seminole	15,450	19,600
East Seminole	3,700	3,500
Bowlegs	14,400	19,000
Searight	8,950	10,000
Little River	32,100	37,800
East Little River	15,500	18,550
Earlsboro	40,750	40,000
East Earlsboro	36,250	36,100
Duncan District	7,700	7,750
Graham	3,500	3,500
Fox	1,250	1,250
Healdton	11,900	11,900
Hewitt	7,000	7,000
Scholem Alechem	13,650	13,700
Pearson	800	700
St. Louis	43,700	36,600
Allen	18,950	19,500
Maud	5,900	5,500
Mission	13,050	12,600
Okla. City	113,250	116,450
Sasakwa	10,800	10,500
Konowa	15,700	9,200
Others	66,400	64,900
Total	653,350	658,800

CALIFORNIA

Santa Fe Springs	134,500	133,200
Long Beach	99,800	98,900
Huntington Beach	28,300	28,200
Dominguez	10,000	9,800
Inglewood	17,400	17,200
Midway-Sunset	68,000	69,000
Ventura Avenue	49,000	47,700
Seal Beach	23,500	24,000
Elwood-Goleta	45,300	47,800
Kettleman Hills	15,000	15,300
Others	144,000	142,000
Total	634,800	633,100

KANSAS

Greenwood County	19,000	19,000
Florence-Covert	800	800
Peabody-Ebling	3,100	3,100
Eldorado-Towanda	14,300	14,300
Augusta-Fox Bush	2,950	2,950
Rainbow Bend	1,100	1,100
Russell	3,550	3,350
Churchill	4,000	4,400
Oxford	2,850	2,800
Sedgwick	21,200	21,000
Voshel	17,850	19,350
Others	36,450	33,300
Total	127,150	125,450

NORTH LOUISIANA

	May 10	May 3
Homer	3,550	3,400
Haynesville	4,500	4,450
Caddo Light	9,850	9,950
Caddo Heavy	2,900	2,850
DeSoto-Red River	3,100	4,150
Holly	850	950
Cartersville	3,600	3,200
Cotton Valley	2,150	2,100
Urania	5,400	5,200
Zwolle	3,550	2,950
Others	1,700	1,700
Total North Louisiana	41,150	40,900

LOUISIANA GULF COAST

Lake Barre	900	900
Port Barre	2,000	1,900
Bayou Boullion	150	400
East Hackberry	2,200	2,300
Hackberry	1,300	1,300
Edgerly	550	500
Evangeline	800	800
Lockport	2,750	2,600
Sorrento	350	250
Sulphur Dome	5,900	5,800
Sweet Lake	100	100
Vinton	3,700	3,900
Others	1,400	1,350
Total Louisiana Gulf Coast	22,100	22,100
Louisiana Total	63,250	63,000

ARKANSAS

El Dorado	4,100	3,950
Champagnolle	4,100	4,600
Smackover Light	5,300	5,250
Smackover Heavy	40,250	40,250
Stephens	950	950
Nevada	950	850
Lisbon	1,000	1,000
Others	1,200	1,200
Total	57,850	58,050

MOUNTAIN STATES
WYOMING

Salt Creek	26,100	31,750
Grass Creek	2,100	2,050
Elk Basin	750	700
Big Muddy	2,050	2,050
Lost Soldier	2,950	3,050
Rock River	2,200	2,150
Lance Creek	150	150
Oregon Basin	4,700	4,450
La Barge	1,850	2,100
Others	5,150	3,850
Total	48,000	52,300

MONTANA

Cat Creek	1,200	1,200
Sunburst	5,600	5,600
Pondera	2,350	2,350
Others	50	50
Total	9,200	9,200

COLORADO

Moffats (Craig)	1,000	1,050
Fort Collins	1,500	1,400
Florence	550	600
Others	1,550	1,500
Total	4,600	4,550

NEW MEXICO

Table Mesa	100	100
Artesia	700	700
Hogback	450	450
Kattlesnake	400	400
Bal. Lea and Eddy Counties	9,900	8,600
Others	900	900
Total	12,450	11,150
Total Mountain States	74,250	77,200

EASTERN STATES

(Including Ill., Ind., Ohio, W. Va., Pa., Ky., N. Y.)	127,000	128,000
Michigan	11,200	11,400
Total Eastern States	138,200	139,400

PRODUCTION SUMMARY

East of Rockies	1,886,100	1,884,900
Total U. S.	2,595,150	2,595,200

The Guiberson Disc Bit

in this picture was used by the Hammond Drilling Company, at Maud, Oklahoma.

The Guiberson Disc Bit is a consistent holder of speed records everywhere it is used, its four discs cutting a swift passage through soft or semi-hard formations, and also penetrating rock shells, obviating the necessity of pull-outs to change bits. The Guiberson Disc Bit also assures a straight hole, casing having been run in after it as far as 2500 feet without encountering the slightest tight place or shell. Reamers keep the hole full size. Water flush holes extend to bottom of bit, keeping surfaces clean for cutters. If you are interested in speed and efficiency, and, above all, a straight hole, the quickest way you'll get them will be with the Guiberson Disc Bit. Fully Patented.

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GUIBERSON

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The Mary Sudik -- and LINK-BELT HYPER Rotary Chain

THE Indian Territory Illuminating Oil Co's., No. 1, Mary Sudik known in the Oklahoma City Pool as "Wild Mary" was drilled to a depth of 6472 feet with Link-Belt HYPER Rotary Chain.

Present day deep drilling demands more powerful chain. Link-Belt has produced this chain in the new HYPER, the supremely perfected Rotary Chain. HYPER Chain Folder No. 1199 sent upon request.

LINK-BELT COMPANY

Leading Manufacturers of Positive Driving Equipment

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LINK-BELT COMPANY

PERSONAL MENTION-MEN YOU KNOW

H. V. Moffatt of Washington, D. C., a petroleum engineer in the conservation branch of the mineral leasing division, U. S. G. S., has recently spent some time in Casper offices of the survey checking conditions and special cases incident to permits issued to prospect for oil and gas on the public domain.

Hal W. Stewart, general counsel for western division of Ohio Oil Company, accompanied by Mrs. Stewart and their son, are visiting in Bozeman, Montana, for a time with Mr. Stewart's people. He has recently been transferred to the company's home offices in Findlay, Ohio, where he is to be the assistant general counsel for Ohio Oil Company and its subsidiaries.

C. A. Obenchain, special investigator in the offices of the general land office, department of the interior, Washington, D. C., has been in Denver for a time checking the records of patents to oil shale lands in Colorado, Utah and Wyoming.

Luther R. Holmes, vice-president in charge of refineries for The Texas Company, visited his brother Earle D. Holmes in Casper last week while en route from the Pacific Coast to New York City where he will have headquarters in the future. Until recently he has been in charge of The Texas Company operations on the coast.

President E. G. Seubert of the Standard Oil Company (Indiana) accompanied by members of the board of directors paid a visit to the Casper offices and refineries last week and made the annual inspection. On Monday evening, May 5, there was a joint general committee meeting of the representatives from Laramie, Greybull and Casper plants.

Charles Bunge, Jr., of Findlay, Ohio, vice-president and general manager of Illinois Pipe Line Company, and J. H. Ferry of Lima, vice-president in charge of operating offices, were in Casper last week making an inspection of the company's Wyoming pipe lines.

George Yackey, chief engineer for the E. B. Wiggins Oil Tool Company, Los Angeles, left May 10 for Houston, where he will spend a week or more on business for the company, and may decide to visit other oil field areas before returning to headquarters.

J. C. Ballagh, of the Patterson Ballagh Corporation, Los Angeles, is spending the first half of May visiting various points in Texas, New Mexico and Oklahoma and is due back home about May 15.

John D. Clark, formerly president of Midwest Refining Company, who is now a distinguished student of economics at Johns Hopkins University, plans soon to go to Russia for a study of the economic problems confronting the Soviet Republic. He will be one of a party of American students of economics which has been invited by the Soviet to make the survey. During his sojourn in Russia Mrs. Clarke and the eldest son, Robert, will visit in England. In 1931 Mr. Clark will take his chair of economics offered him by the University of Denver.

Clyde Elwood of Los Angeles, vice-president and sales manager of Axelson Machine Company, Ltd., spent several days last week in Casper in conference with the local representative. He was met in Casper by Mills Hammitt the company's Mid-Continent representative.

Mrs. M. L. Gwin, in charge of the mapping department of Associated Oil Company at Los Angeles, departed on her summer vacation May 1, accompanied by her husband, traveling overland. They made a short stop at El Paso and then proceeded to Oklahoma City to visit Mr. Gwin's relatives. Mrs. Gwin will tour the celebrated Oklahoma City field during her Oklahoma visit.

W. R. Guiberson, vice-president of Guiberson Corporation, with headquarters at Dallas, was in Los Angeles, May 9, to celebrate his twenty-fifth wedding anniversary. Mrs. Guiberson has been spending much of her time in California, the home state, and Dick had to come back for the celebration. Mr. Guiberson is also director of manufacturing and will spend only a few days in Los Angeles before returning to Dallas.

L. R. Holmes, who has been vice-president and manager of refineries and pipe lines for The Texas Company of California, has been transferred to New York City where he becomes manager of the refining department of The Texas Company, the parent company. Mr. Holmes' successor in California has not been announced.

A party of students from the Colorado School of Mines recently visited Los Angeles basin oil fields to obtain a practical knowledge of field operations and equipment manufacturing methods. All are specializing in petroleum engineering. The party included Herman Tryansky, E. A. Renfro, Sterl Kincade, E. L. Carter, C. R. Kelly, J. F. Purdum, Hial Gernert, Floyd Carr, A. C. Stanfield and Professor B. B. Boatright.

Wayne Blankenship has accepted a position with the Oil Equipment Exposition at Los Angeles, following the decision of the management to make the organization a permanent one and to arrange for a full-time exhibit of equipment as soon as necessary buildings are erected.

W. R. Martin and E. L. Decker, of Martin-Decker Corporation, Long Beach, started a tour by air of much of the United States, May 14, making a stop at Tulsa for the A.P.I. meeting, where Mr. Decker and R. R. Robinson, petroleum engineer, will read papers. The company plane, a new Stimson cabin job, has a pilot, Robert Blair, an experienced pilot as well as a finished air photographer. After leaving Tulsa, where Mr. Robinson will leave the plane, the party will continue to New York City, and the trip back to the West Coast will be more leisurely, permitting frequent stops at numerous oil fields. They hope to inspect the Refugio field in the Gulf Coast about June 15.

E. J. Raisch addressed the Houston Geological Society at its weekly luncheon at the University Club, Houston, on May 13. His subject was, "Some Conclusions from the Costs of Geophysical Prospecting."

Tulsa.—This year the spring dinner of the Mid-Continent Section of the A. I. M. M. E. will be styled one of "Reminiscence." Notice of the meeting from the office of W. H. Collins, secretary, is "Everyone can draw on his past experience for unusual episodes that are worth polishing up and putting on exhibition."

Last year the annual spring dinner was a "Believe It or Not" affair, which proved popular.

Shreveport.—Announcement is made by the Shreveport Geological Society that its eighth annual field trip, planned to cover the Upper and Lower Cretaceous outcrops of Southwestern Arkansas, will take place Saturday and Sunday, June 14 and 15. Start will be made from the Grim Hotel, Texarkana, Arkansas, at 8:00 a.m. of the first day. Further information on this field trip may be had by writing Sidney Mix, Gulf Refining Company, Shreveport.

Lander, Wyoming.—The annual summer school for geological students at the University of Missouri will be held near here this summer, as usual. Dr. E. W. Branson, head of the department of geology, has recently completed arrangements for the several weeks sojourn of the students in this territory.

Oklahoma--Kansas Field Notes

FLOYD L. SWINDELL, *Staff Representative, Tulsa, Oklahoma*

No Immediate Change in Output At Oklahoma City

TULSA.—No immediate change will be made in the output of the Oklahoma City pool. This decision followed a meeting of producers from that pool and members of the proration committee of the Mid-Continent Oil & Gas Association Monday night, May 12. The meeting was the outgrowth of a petition from Oklahoma City oil producers that pipe line runs, now about 16 2-3 per cent of potential output, be raised.

Proration orders of the Corporation Commission allow 25 per cent production but pipe line facilities are not sufficient to allow runs to that figure. Monday afternoon, May 12, the proration committee of the Mid-Continent Oil & Gas Association met and considered the whole matter of production and consumption, as regards Oklahoma. It was brought out the present consumption does not warrant more than 600,000 barrels daily from Oklahoma. But the state is producing in excess of that amount, leaving purchasing companies to store from 30,000 to 50,000 barrels daily.

When the proration committee met later with Oklahoma City producers these facts were presented. Then it was decided not to ratify any change in runs from that pool. Output will remain for the remainder of May about what it has been for the first half of the month. Another meeting of committees will be held May 29.

Development in the Oklahoma City pool has turned to the north, where locations now have been made across the Canadian River, as well as in the river bed. This is the section which will bring drilling into a stage of town-lot development. A recent check of the map shows 23 wells drilling north of present producing limits of the pool, 10 are across the North Canadian River.

Only one of these wells is deep enough to promise any early answer to drilling. This test of Century Petroleum Company's Wyatt 1, C NE NW NW, Section 2-11-3w, is below 5600 feet. This well is more than a mile northwest of present production.

The condition which makes this area promising is that some of the large wells of the pool have been completed there within the past two weeks. Much of the drilling in the present crop of north end wells is being done with rigs which have been built on piling.

The south end of the pool is not yet definitely known but the Sudik well of Prairie-Phillips and Slick, C NE NE, Section 8-10-2w, makes it certain that production will not extend much farther in that direction. The Sudik well was drilled to 7715 feet, where it encountered what geologists have termed the Wilcox sand. This well encountered the same sections as found in wells within the producing zone but several hundred feet lower structurally. Efforts to plug back are still being made and the well has been shot several times. It is two miles from this well to the south limit of production in Sections 30 and 31 of 10-2 west.

Fault Indicated

Geologists have become convinced of the existence of a fault on the northeast side of the pool. T. B. Slick's Banta 1, SE SW SE, Section 18-11-2w, now fishing, total depth 7554 feet, has found all sections as found in wells to the southwest but the sections have run from 1000 to 1500 feet low. Other wells also have been running low.

The Slick well, however, is to be carried deeper in order to gain further knowledge of geological conditions.

Of the 213 drilling wells, 60 are below 6000 feet and 30 of these are lower than 6500 feet. The 30 wells below 6500 feet should be completed during May and the remaining 30 should be completed by June 15.

Due to exceptionally good roads, operations in the Oklahoma City pool have not been seriously handicapped by the recent heavy rains, except in the north end where several river bed leases have been under water. Nine completions were made during the week ending May 10, the largest being Cromwell-Franklin's Trosper Park 18, SW NW SW, Section 12-11n-3w, which came in for an initial flow of 1902 barrels in 3¼ hours. This well had the top of the Oswego lime at 5947 feet, and set 6⅝-inch casing five feet above the top of the sand which was encountered at 6337 feet. Total depth is 6403 feet.

McPherson County Leads Kansas In Number of New Wells

TULSA.—The Russell County wildcat of the Empire Oil & Refining Company and associates, Dillner 1, NEc Section 36-13s-15w, produced 130 barrels of oil in four hours on the swab. This well was reported last week as indicating another wildcat strike for Western Kansas. It entered a conglomerate at 3300 feet and was drilled to 3306 feet last week. It has been drilled another three feet.

This well is southeast of the town of Russell and in the same direction from the Russell field, which established oil production in Western Kansas several years ago.

The Voshel pool, McPherson County, led the flush fields of the state in new wells last week. Independent Oil & Gas Company's Morehouse 1, NEc Section 3-21-3w, swabbed 1100 barrels in 24 hours. This well had the top of the Wilcox at 3385 feet and was drilled to 3405 feet.

Prairie Oil & Gas Company's Krehbiel 1, NE SE Section 4-21-3w, had gas flow of 20,000,000 cubic feet at total depth of 3064 feet. The flow was 10,000,000 at 3030 in chat. It is likely that the gas flow will be bradenheaded and the well drilled deeper.

Additional outlet has been given the Voshel pool through the completion of a field line by Skelly Oil Company. The pipe line extends from the pool to Elyra, where it is loaded and shipped by rail to the El Dorado refinery of the concern.

Tests completed last week give the two McPherson County pools, Voshel and Ritz, potential output of 40,000 barrels daily. The Ritz pool had 10 wells, which flowed 10,113 barrels, while Voshel had 38 wells capable of producing 29,013 barrels, with 10 wells to be tested by the umpire. Voshel has 29 pumping wells; seven on the swab and two flowing.

In Rice County Allison & Fitzwilliams' Mezger 1, SW SE NE Section 21-20-10w, is rated as a well good for 70 barrels an hour on the swab, after being deepened another foot. This well found the top of the Siliceous lime at 3357 feet and entered oil bearing formation two feet lower. Total depth is now 3370 feet.

Kansas producers will meet in Wichita this week to decide on a proration basis for McPherson County pools. Tom Johnson, who supervised the taking of potentials in the Ritz and Voshel pools, has sent letters recommending that these be held to either 50 or 60 per cent of potential output.

Technical Subjects on A. P. I. Mid-Continent Program

TULSA.—A technical program will be combined with the annual meet- of the Mid-Continent district of the A. P. I. Division of Production, which will be held in the Crystal Ball Room of the Mayo Hotel, May 23 and 24. Officials will be elected and other business of the division transacted.

The program will include three technical papers, which have been prepared by engineers of Mid-Continent oil concerns. Car. A. Young, executive secretary of the division of production, will outline activities of the division. E. B. Reeser, president of the A. P. I., will be heard the morning of the first day.

The program has been prepared under the direction of the following committee: W. K. Whiteford, chairman; R. W. Bond, R. M. Carr, K. A. Covell, E. H. Griswold, R. R. Hawkins and D. L. Trax. This committee will have charge of the meeting. J. R. McWilliams, engineer of Skelly Oil Company, is chairman of the Mid-Continent division.

The program follows:

FRIDAY, MAY 23

Morning Session: 9 A. M.

Registration.

10:00 A.M.—Chairmen, J. R. McWilliams and R. W. Bond.

Opening Address—E. B. Reeser, president, American Petroleum Institute and Barnsdall Oil Corporation.

Second Address—W. M. Davis, chairman, A. P. I. Division of Production, and vice president Phillips Petroleum Company.

Outline of activities of the division of production—C. A. Young, executive secretary.

Report of nominating committee and election of officers.

Afternoon Session: 2:00 P. M.

Chairmen, W. K. Whiteford and F. W. Robson.

"Recent Developments in Deep Well Pumping," group paper compiled by R. R. Hawkins, division engineer, The Texas Company.

"Weighing Wells," group paper by R. M. Carr, Sinclair Oil & Gas Company; H. D. Collins, Gypsy Oil Company; R. R. Hawkins, The Texas Company, and L. F. Thompson, Carter Oil Company. Compiled by L. F. Thompson.

SATURDAY, MAY 24

Morning Session: 9:30 A. M.

Chairmen, R. R. Hawkins and C. V. Millikan.

"Mud Fluids," C. P. Parsons, Halliburton Oil Well Cementing Company.

"Oil Treating Methods in the Mid-Continent," group paper by P. L. Guarin, Shell Petroleum Corporation; R. R. Hawkins, The Texas Company; J. R. McWilliams, Skelly Oil Company; C. D. Miller, Barnsdall Oil Corporation; L. A. Ogden, Empire Companies; Charles Prather, Gypsy Oil Company; G. A. Shaner and I. S. Salinkov, Carter Oil Company. Compiled by C. D. Miller.

Plans Made for Scout Session at Tulsa

Tulsa.—Arrangements have been completed for the annual meeting of the Mid-Continent Oil Scouts and Land Men's Association convention, which will be held here May 23 and 24. The meetings will be in the Hotel Tulsa. C. A. Savage has prepared the program.

Registration will begin at 9:30 Friday morning, May 23 and continue until 1:30 in the afternoon. Following this the scouts and land men will be guests of the Tulsa Jockey Club and will attend the races. The annual banquet will be held at 7:30 p. m., with S. M. Blevens as toastmaster. Tom Munroe will deliver the address of welcome and Ralph Walkingstick, president of the association will respond. Addresses will be heard from E. B. Reeser, president of the American Petroleum Institute and Wirt Franklin, president of the Independent Petroleum Association of America. There will be vocal numbers by the quartette of the First National Bank of Tulsa.

The business session will be held Saturday morning. There will be several papers on different oil areas and methods of handling scouting work. Officials will be elected. In the afternoon the scouts will be guests of the Tri-State Royalty Company on the W. E. Brown farm near Tulsa. The annual dance will be held Saturday night.

Ladies will be entertained Friday afternoon with a bridge party on the mezzanine floor of the Hotel Tulsa. All prizes have been provided by R. Otis McClintock, president of the First National Bank. There will be a theater party in the afternoon.

Gas Meeting May Be Held In Tulsa

New Orleans.—The presence of William B. Way, general manager of the International Petroleum Exposition and former secretary of the Natural Gas Association of America, at the New Orleans convention of the Natural Gas Department of the American Gas Association proved to be in the interest of promoting consideration of holding future annual meetings of this body in Tulsa, during exposition dates. This proposal was favorably received by natural gas officials and is said to offer the incentive for a larger annual attendance, as well as an opportunity to hold an exhibit of equipment and appliances in connection with the International Petroleum Exposition.

Refined Market Off Pending More Favorable Weather
(Continued from page 54)

while the indicated normal represented the total for all refineries. This chart, however, shows a comparison that more nearly conforms to actual conditions, since A. P. I. figures have been revised to show the approximate quantity of crude consumed daily by all refineries in the United States. Analysis shows that the indicated excess refinery runs is directly attributed to refiners in Texas and on the Atlantic Coast, where runs have materially exceeded normal requirements for refined products.

According to the American Petroleum Institute, refinery runs during the week ending May 10 aggregated 18,622,000 barrels, a gain of 549,000 barrels over the preceding week. This report, which was received at the time of going to press, is not included in the accompanying chart. Accordingly, the curve of actual runs will again turn sharply upward to a daily average of 2,782,000 barrels. This is based upon the conversion of A. P. I. figures to a 100 per cent basis, A. P. I. figures representing 95.6 per cent of potential capacity. Gasoline stocks aggregated 53,203,000 barrels, a decline of 623,000 barrels for the week.

Sagging prices and poor demand for refined products in the Mid-Continent refining centers form a combination of circumstances that are disrupting the schedules of the plant owners. The domestic jobbers are not supporting these interior plants with a normal volume of buying orders, and relief from the congested market situation is not anticipated until clear and warm weather puts in its appearance.

Mid-Continent refiners have lately attempted to stimulate buying through price concessions, but failed to gain the desired results even though quotations on U. S. motor gasoline declined more than a half cent in price since the middle of April.

Dull trading is not confined to the Mid-Continent gasoline market, as a sympathetic condition has engulfed the natural gasoline division, while weakness in price and demand is reported on burning oils. This decline in revenue from burning oils along with an adverse gasoline market has narrowed the profit of the plant owners to a minimum. A price range of 6½ to seven cents per gallon for U. S. motor gasoline prevailed in North Texas early this week for prompt movement, while popular grades of fuel oil average about 55 cents per barrel, with a minimum quotation of 40 cents per barrel in West Texas refining centers.

Sun's April Shipments

Beaumont, Texas.—Water shipments of Sun Oil Company from its crude oil terminals at Sun and Sabine Pass, below here, on the ship channel, amounted to 775,243 barrels during April, all being coastwise traffic.

NOTICE

ECTOR COUNTY LEASE SALE

The acreage offered below is the last chance to secure protection Leases in the North-Central part of Ector County as it is leased solid by the major companies with the exception of our holdings, located in the center of drilling activity of this West Texas play.

TWO DRILLING WELLS

On this upward trend, the hot play centers between the Ector-University pool and the Deep Rock Andrews County wells. Penn-Devonian are drilling on Section 27, Block 44, and Southern Crude on Section 26, Block 43, Township 1-North.

We own the following Leases North of the Southern Crude well:——Sections 2, 1, C, B, South ½ of 13, 17 and 20, Block 43, Township 1-North. North of Penn-Devonian well:—Section 9, Block A, Section 16, North ½ of 6, Block 44, Township 1-North, Section 8 and two 80's in Section 9, Block 44, Township 2-North.

The above is the only available acreage on the market and is offered subject to prior sale and withdrawal.

LOW RENTAL

The above Leases have over five years to run and are subject to the small rental of 15-cents per acre.

We also own 1120 acres six miles North of the Ector County Pool, located in Sections 9, 15, 16 and 21, Block 44, Township 2-South. These Leases will also be sold to a quick buyer.

No tracts smaller than 80 acres will be offered.

We also offer royalty under Edwards Brothers ranch of 52 Sections, Crane and Ward Counties. We own all of the above outright.

BRODERICK & CALVERT

904 FIRST NATIONAL BANK BLDG.

FORT WORTH, TEXAS

North and West Texas Field Notes

H. H. KING, *Staff Representative, Fort Worth, Texas*

Andrews County Tests Nearing Production Level

SAN ANGELO.—Andrews County's bid for an active drilling campaign this year rests with the production performance of three tests now drilling below 4000 feet to the south and east of the wildcat flowing well of Deep Rock Oil Corporation and associates on the Ogden land. These interests are drilling near the 4300-foot level on their A. R. King 1, a south offset to the Ogden producer, which is averaging 160 barrels oil daily by natural flow from lime at 4345 to 4428 feet after being on production since last December.

The California Company and Atlantic Oil Producing Company hold one-quarter interest each in these operations, and the latter is routing an eight-inch pipe line through the field in building from Midland to the Hobbs field.

Deep Rock Oil Corporation et al's Mathis 1, located in southwest corner of Section 4, and one and one-half miles east of the producer, is drilling at 4100 feet after setting casing on top of Brown lime, while B. L. King 1, located a mile south of production, is landing pipe at 4110 feet.

Second Test to be Made

Newton Maer & Staniforth of Wichita Falls are to drill a second test on the Meadors ranch, located to the southwest of the above operations, and has tentatively staked location at center of southwest quarter, Section 8, Block 41. Their first test on this block was a failure, but was not carried to the Odgen horizon.

Fuhrman Petroleum Corporation's Ford 1, located six miles south of the producer is having casing trouble at 1780 feet.

Judkins Extension Fails

Failure of the oil producing area in the Judkins field, Ector County, to extend north of the railroad lessens its importance as a possible disturber in the West Texas crude market situation. Two tests north of the railroad failed to develop commercial oil producers when drilled more than the normal depth in the lime horizon during the past week. Independent Oil & Gas Company and Tidal Oil Company's Eidson 1, Section 6, encountered the lime sufficiently high to earn a light producer, but when carried to 3800 feet developed only 4½ bailers dead oil in 36 hours. It will be deepened to the water level, then plugged back and shot as a last resort to make a pumper. Texas Pacific Coal & Oil Company's McKenzie 1, located about one mile further to the northwest, suffered a similar fate when carried to 3764 feet.

Gulf Production Company's Kloh 1-G, a corner well on the northeast side of the proven area, succeeded in making a commercial well after shooting with 240 quarts at 3696-3755 feet. This well has a total depth of 3760 feet. It swabbed 52 barrels of oil prior to shot, and jumped to 230 barrels of oil, testing 33.9 gravity during first 24 hours after shot, but soon declined 50 per cent in output.

The west and south sides of the Judkins field remain to be defined; and a healthy drilling campaign is assured for the summer from that portion of the field that is already known to be productive. The crude marketing situation in the field is congested because of only one out of the four pipe lines taking oil for purchase, except where swapping arrangements are worked out on a reciprocity basis. Burford Oil Company is the lone purchaser of crude, and late last week notified a few connections that were not protected with contracts, of intentions to curtail oil runs through its four-inch line, except on a storage basis. The oil ranged from 34 to 36 gravity, but is not popular with major companies because of having a sulphur content comparable with the oil produced in the Church & Fields area, Crane County.

Meeting of Yates field operators and crude purchasers to decide on the question of restoring the production allowance of the field to 130,000 barrels daily, or leaving it at the temporary figure of 110,000 barrels, has been postponed by W. A. Moncrief, chairman of the proration advisory committee, from May 12 to May 16. Resumption of the maximum allowance really rests with Humble Oil & Refining Company, since it asked for 60 days relief on a portion of its crude runs last March, and the 20,000-barrel cut in production was ordered by the Texas Railroad Commission because other buyers in the field did not desire to assume the added burden of runs. The situation in respect to market outlet remains unchanged, should Humble Oil & Refining Company not care to resume its former takings.

Irion County is completing its fourth shallow oil producer through the efforts of Carl G. Cromwell et al on the Nutt lease, where the best well in the pool is in process of completion. Nutt 2 swabbed and flowed 85 barrels oil on three hour test late last week from sand at 1451-61 feet. A two-inch gathering line which extends to a nearby tank car siding, has been completed to permit crude shipments to the San Angelo plant of the San Angelo Refining Company.

Gray County Production Again Passes 70,000 Barrels

AMARILLO, Texas.—Sustaining a loss of 2565 barrels in daily average production during the past week, Gray County came through with a sufficient volume of new production later in the week to again pass the 70,000 barrel mark on the next report. The county averaged 68,260 barrels daily during the past week, and added 10,000 barrels of new production from eight completions.

Magnolia Petroleum Company's S. Faulkner 5, located in the southeast corner of section 30, furnished a surprise completion for the east side of the Finley-Brown field when it gauged 1747 barrels of oil during the first 14 hours from broken lime and granite wash formation at 2785-2872 feet, while the east and southeast offsets held by other companies apparently missed the flush flow. Faulkner 5 was flowing an average of more than 100 barrels oil per hour Friday morning, May 9, with an estimated daily flow of 21,000,000 cubic feet of gas. Mid-Continent Petroleum Corporation and Tidal Oil Company's Langham 1, an east offset, is flowing 170 barrels daily, although slightly deeper. The latter interests have authorized the drilling of their Langham 2, in the northeast corner of the lease, giving Magnolia Petroleum Company two new locations, and The Texas Company one.

Deeper drilling on Gulf Production Company's P. A. Worley 6-A, located in the NEc SW Section 36, boosted the flow of oil to 3205 barrels daily. This well was making 200 barrels daily at 2746-81 feet early last week, and when deepened to 2868 feet, encountered the prolific horizon. The oil tests 38.6 gravity, and is accompanied by 8,000,000 cubic feet of gas. Phillips Petroleum Company's Coombs-Worley-Foxx 2, a northeast offset to the

above big well, made 1600 barrels initial at 2830-45 feet, but may be deepened. The northwest end of the Finley-Brown field remains to be defined, as Gulf Production Company's Coombs-Worley 2-A, located 990 feet from the south line and 330 feet from the east line of the SE Section 38, flowed 420 barrels during first 17 hours while drilling in at 2845 feet. Two new locations have been assigned the east and south lines of this 160-acre lease, and both are to be offset by the Wilcox Oil & Gas Company.

Gas lift installations used by the Phillips Petroleum Company on four new completions in Hutchinson County accounted for 2975 barrels of new production credited to the county during the past week, including three wells on the Johnson ranch properties. Phillips Petroleum Company is the largest oil producer in the Panhandle district, having averaged 23,800 barrels daily during the past week, and The Texas Company ranks second with a daily output of 12,315 barrels during the past week.

Cockrell-McIlroy Oil Company's W. F. Simms 1, located in the SEc of the N½ of S½ Section 11, block 7, I&GN Ry. survey, Carson County, is nearing an interesting depth to test the prolific oil horizon that furnished a 2100-barrel wildcat producer for Empire Gas & Fuel Company early last February. Late last week Simms 1 was fighting 43,000,000 cubic feet of gas while drilling at 3110-35 feet. It is about one mile northwest of the wildcat producer, which is the first big well to be completed on the south flank of the granite ridge, and flowed from granite wash at 3200-32 feet.

Van Field Is Extended 2000 Feet To Northeast

CORSICANA, Texas. — Extending the prolific oil area in the Van field about 2000 feet to the northeast, Pure Oil Company's J. J. Murphree 1 is rated at 5000 barrels daily, based on its initial performance in flowing via the customary restrictions applied to all wells. This new producer was drilled to 2953 feet, as compared to a total depth of 2693 feet on Sun Oil Company's I. W. Thompson 1, which is the nearest well. Although Murphree 1 is an average size producer for the field, it encountered the Woodbine sand structurally lower than anticipated. Other completions for the field during the past week were mostly confined to the close vicinity of the Van townsite.

Substantial shrinkage in the volume of wildcat activity in Central East Texas has been in evidence as result of numerous failures recorded, with a one-half dozen credited to the district during the past week. While this toll of dry holes was being exacted the highly touted LaRue block test of Shell Petroleum Corporation in Henderson County became eliminated as a possible producer in the Woodbine sand series, and the presence of salt water with the show of gas reported from C. F. Lytle et al's Freestone County wildcat test lessens its importance.

Lytle and others' Holt-Lytle 1, located in northwest part of 80½ acre tract in the D. Avant Survey, developed a good show of gas when sand tester was run to 4620 feet, with a total depth of 4930 feet. Salt water also appeared during this test, but the owners have decided to ream the hole from 4620 to the bottom, and make another test, then run pipe should the results be favorable. This wildcat is being drilled on contract, which called for a depth of 4500 feet, by R. H. Dearing & Sons, who also have an interest in the acreage. Freestone County contributed one of the wildcat failures charged to the district during the past week when Cranfill-Reynolds Company's W. E. Bonner-George 1, S. T. Ballour Survey and northwest of Fairfield, failed to find production in the Woodbine sand horizon. This test logged the Austin chalk formation at 3013 to 3393 feet, and was abandoned at 4100 feet.

Cranfill-Reynolds Company's second wildcat failure for the month in Van Zandt County came during the past week in the Grand Saline area. This company's C. M. Alexander 1, J. Burleson Survey, was drilled to about 3400 feet within less than 30 days from date that it was spudded, and is plugging back to try and make a small oil pumper from the Nacatosh sand horizon. Cranfill-Reynolds Company's Coker-Ledbetter 1, located 9000 feet northeast of the nearest oil production in the Van field, encountered salt water in the Woodbine sand series at 3292-3370 feet, and is trying to make a shallow pumper at 1200 feet.

Upchurch-Will Thompson et al's Owlet School lot test on the McKinney-Williams Survey, located one and one-half miles southwest of the nearest production in the Van field, has been ordered plugged at 3073 feet in the Austin chalk horizon, which was topped at 2987 feet. This test logged the Pecan Gap chalk formation at 2021-2087 feet, with a surface elevation of 495 feet.

Wildcat Test Abandoned

Encountering salty anhydrite at 1656 feet led to the abandonment of Sun Oil Company's wildcat test on the Bowers-Maier 548-acre tract, near Saline Lake, Anderson County. The rotary rig has been skidded 150 feet south and 14 degrees east of the failure, and drilling started on a second test of this known salt dome. Sun Oil Company has leased the rotay rig from H. S. Moss, Dallas contractor, to drill the second test with its own crew. In eastern Rusk County, Magnolia Petroleum Company's wildcat test on the Duran-Wylie 485-acre lease, Aquilla Norris Survey, has been ordered plugged at 3295 feet in brittle lime formation. This failure had a surface elevation of 431 feet, and is 1¼ miles northwest of a 4035-foot dry hole drilled by the company last December.

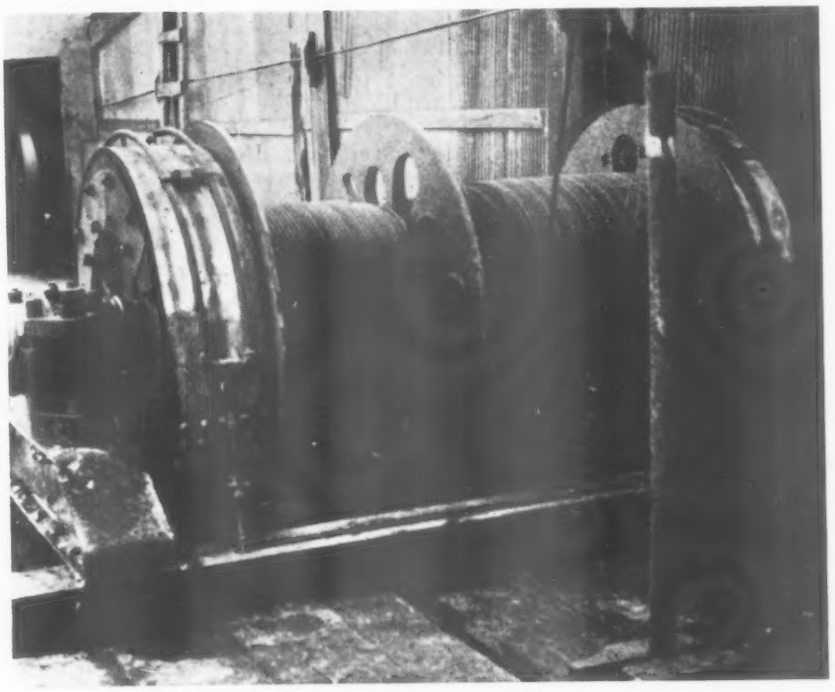
Westexas Oil & Royalty Corporation and the Owen-Sloan Oil Company have abandoned their wildcat test on the Negro Orphanage farm, located 1¼ miles south of Mineola, Wood County, after reaching a depth of 4610 feet. This test was given a high rating at the start because of favorable surface and geophysical reports, but logged the key formations structurally low. It was situated on a small group of leases almost surrounded by acreage held by the Pure Oil Company. Royalty deals provided the most trading activity, and The Texas Company is reported to have spent about $15,000 for a spread of royalty from the Westexas Oil & Royalty Corporation, while the Owen-Sloan Oil Company paid a large sum to obtain an interest in the test and leases.

George L. Pace of Wichita Falls and associates are launching their second wildcat test in the district, having erected derrick to drill on the Sarah Anthony 73-acre farm, Henderson County, about one mile west of Eustice. The location was made 150 feet out of the southeast corner of the farm, Joseph M. Bettram Survey. Deep Rock Oil Company, Fort Worth, and others are rigging up rotary to drill in Titus County on the fee land of the First National Bank. Location was made 660 feet out of the northeast corner of 80-acre tract, Henry W. Cobb survey. In Rains County, Everett Morrison et al are to drill a Woodbine sand test 66 feet out of the southeast corner of the J. Franklin 75-acre farm, John Christian Survey, which is about 6½ miles northwest of Alba. The derrick was blown down by a storm last week when only partially completed.

Shell Petroleum Corporation's wildcat test on the S. T. Stephens farm, which is testing out the LaRue block in Henderson County, developed a fishing job late last week in broken shale at 3691 feet. This test has not encountered oil, gas or water, and believed to have passed through the Woodbine sand horizon.

Collins, Montana.—The eight-mile, three-inch pipe line laid from the Bannatyne field to the refinery and loading racks near this town have been completed by the W. F. Brittain interests and the finishing touches are being put on the gathering lines in the field. Sterling Oil Company's refinery will be in operation within another two weeks. Product will be sold to the local market for gasoline, distillate and other products.

Denver. — Transcontinental Oil Company is resuming operations at its well in Dolores County, Colorado. If this is a producer it will be the highest oil well in the world. It is on the Glade structure, 40 miles from Dolores, and has a surface elevation of 9000 feet.



Close view of the special heavy type sand reel used in drilling the record deep cable tool hole

Depth Record for Cable Tools Not Excessively Costly

(Continued from page 32)

The reel has a water cooling system, and effective lubrication is gained for the bearings from three chain oiler type, with an oil capacity of three quarts. The shaft is six inches in diameter, while the drum center is 16 inches in diameter. This drum has a capacity of 10,000 feet of 5/8-inch wire line on the live side, with capacity for 6000 feet on the reserve side. There are two brakes of 42 inches in diameter each, with a 10-inch face. The control of this reel is carried to the derrick floor by a lever which operates both the brake and friction clutch.

The easy manner in which the cable tools performed in dangling on the end of the 8900 feet of wire line was particularly gratifying to Williams, who reports that the men on the derrick floor got a perfect kick from the tools. A 24-inch stroke on the beam was used in drilling from 7600 to the 8900-foot level. Actual drilling time for the day and night crews reached an aggregate of 167 days, according to Williams.

Special care was taken in preserving cuttings from the hole, and when drilling was concluded Williams turned same over

Log of the Deepest Test Drilled With Cable Tools

(*Continued from page* 31)

Nature of Strata	Color, Soft or Hard	Thickness	Total Depth	
Lime		10	6282	
Shale and Shells		33	6315	
Shale, Brown		20	6335	
Lime, Gray		9	6344	
Shale		71	6415	
Lime, Black, Hard		10	6425	
Shale and shells		46	6471	
Lime, broken, Black		9	6480	
Lime, Black, Hard		5	6485	
Shale and shells		53	6538	
Lime, Black		16	6554	
Lime, Black, Hard		5	6559	
Lime shells and shale, Black		76	6635	
Shells and shale, Black, Hard		5	6640	
Lime, shells and shale		24	6685	
Lime, Brown		10	6693	
Shale and shells		42	6735	
Lime, Hard, Black		45	6780	
Shale and shells, Black		102	6882	
Lime very Hard, Black		5	6887	
Lime, Hard, Gray		36	6923	
Lime shells and shale, Hard		115	7038	
Lime, shells and shale, Black		26	7064	
Lime, Dark Gray		11	7075	Total depth
Lime, flinty, Gray		35	7110	Jan. 15
Shale and lime shells, Black		86	7196	
Lime, Hard, Black		9	7205	
Shale, Black		20	7225	
Lime, Hard, Black		10	7235	
Lime, Medium, Black		19	7254	
Lime, Hard, Black		16	7270	
Lime and shale, Black		65	7235	
Lime, Hard, Gray		7	7242	
Shale, Black		31	7273	
Lime, Gray		12	7285	
Lime, Hard, Black		15	7400	
Shale and shells, Black		75	7475	
Lime, broken, Gray		18	7493	
Lime, Hard, Black		10	7503	
Lime, pyrites of iron, Black and Gray		19	7522	
Lime, Hard, Black		25	7547	
Lime, Broken, Black		18	7565	
Lime, Hard, Dark Gray		34	7599	
Lime, very Hard, Brown		8	7607	
Lime, Hard, Dark Gray		58	7765	
Shale, Black		5	7770	
Lime, Broken, Gray		22	7792	
Lime, Hard, Black		3	7795	
Shale, Black		17	7712	
Shale and lime shells, Black		128	7840	
Lime, Hard, Gray		10	7850	
Shale and lime shells, Black		44	7894	
Lime, Black		8	7902	
Lime, sandy Gray		43	7945	
Shale, Black		5	7950	
Lime, Hard, Gray		2	7952	
Lime, sandy Gray		35	7987	
Shale and lime shells, Black		48	8035	
Sand, medium, Gray		15	8050	
Lime, sandy, Dark Gray		17	8067	
Shale, Black, Black		3	8070	
Lime, Hard, Gray		46	8116	
Shale and lime shells		49	8165	
Shale, Soft, Black		25	8190	
Lime, Hard, Brown		13	8203	
Slate, Black		20	8223	
Shale and lime shells		17	8240	
Lime, Hard, Gray		5	8245	
Lime shells and shale, Black		30	8275	
Shale, Soft, Black		37	8312	
Shale and lime shells, Black		30	8342	
Shale, Soft, Black		23	8365	
Shale and lime shells, Black		25	8390	
Shale, Soft, Black		22	8412	
Lime, Soft, Black		19	8431	
Shale, Black		27	8458	
Lime, Soft, Black		49	8507	
Lime, Hard, Black		5	8512	
Lime, Medium, Black		8	8520	
Shale and lime shells, Black		22	8542	
Lime, Medium, Black		23	8565	
Lime, Soft, Black		35	8600	
Shale, Soft, Black		10	8610	
Shale and lime shells, Black		27	8637	
Shale, Black		8	8645	
Lime, Brown, Hard		5	8650	
Broken lime and shale, Black		10	8660	
Lime, Medium, Black		15	8675	
Lime, very Hard, Black		5	8680	
Lime. Soft, Black		60	8740	
Lime, very Hard, Black		6	8746	
Lime. Hard, Black		9	8755	
Shale, Black		12	8767	
Lime, very Hard, Gray		4	8771	
Shale, Hard, Gray		15	8786	
Lime, Gray and White sandy		12	8798	
Lime, Gray and White		16	8816	
Corrected measurement on sand line, and found it to be			8836	
Lime, very Hard, sandy Gray		9	8845	
Lime, Gray, chalky		2	8847	
Corrected by Halliburton measurement			8858	
Lime, Gray, sandy		24	8884	
Lime, Gray, sandy		16	8900	
Making salt water, very hot— Total Depth			8900	

to Dr. H. P. Bybee, geologist for the University of Texas, to be distributed among the various companies that desire such information. This information was made available to companies, although none offered to lend financial support to the drilling of the test by purchasing leases, or otherwise. Dr. Bybee has arranged for a set of thermometers to be set at intervals in the deep hole for temperature tests, which will be made public later.

Pete Williams operates in the West Texas district as Williams & Williams Drilling Company, with his son, J. P., as partner. The former gained his start in the oil business in doing field work at Beaumont about 30 years ago, and for the past 17 years has been engaged in contracting work, with an occasional oil strike for his personal account. He has four strings of cable tools, and one machine. He lives at San Angelo.

The drilling crew on the Irion County test included D. H. Vandervort and A. E. Henderson, drillers, and E. J. Smith and Alfred Mabry, tool dressers.

Moody-Seagraves Buys Moran Gas Properties

Houston—Moran Corporation of the South has disposed of the stock of its subsidiary, Moran Gas Corporation, which owns and operates 31 miles of transmission line running from White Point gas field in San Patricio County to the towns of Taft, Gregory, Portland, Aransas Pass and Ingleside, to Moody-Seagraves interests.

Moran Gas Corporation owns distributing systems in all the towns named and its gas deliveries to customers, both domestic and industrial at this time totals approximately 4,500,000 cubic feet daily. The purchase price was in excess of $10,000,000.

Moran Gas Corporation commenced its operations last September. In the first eight months operations, the company sold over 1,000,000,000 cubic feet of gas to its customers.

Moran Corporation of the South, the parent company, headed by William T. Moran and John W. Anderson, retains all of its other oil and gas properties in Louisiana, Arkansas and Texas and will continue in the management, operation and construction of gas plants. This is the second large deal this company has effected during the past year, having disposed of part of its gas properties in Louisiana and Arkansas last June to the Cities Service Corporation.

Shreveport.—The first gasser in the Upper Trinity horizon of the Bethany gas field of Panola County, Texas, was completed May 13, by Natural Gas Products Company in Roquemore 8, B. C. Jordan Survey, which came in making 8,000,000 to 15,000,000 cubic feet of gas at total depth of 4647 feet with rock pressure of 1900 pounds.

The gas was reported to be especially heavy with gasoline and may run 2500 gallons per 1,000,000 feet of gas, early reports indicated.

Line Outlet Makes Hobbs Field Potential Market Threat

ARTESIA, New Mexico. — Starting the current week with a flow of 6225 barrels of clean oil during 24-hour gauge, through 1½-inch choke, the banner completion of the Hobbs field, Lea County, has retained its prolific production after waiting nearly four months for a pipe line outlet. This heavy producer is located on Humble Oil & Refining Company's D. A. Bowers-Federal permit, and is now served by Humble Pipe Line Company's eight-inch trunk line, which was placed in operation May 8, with the stream headed direct to Gulf Coast refineries and export terminals. The 34-36° gravity oil, bearing a small sulphur content as compared to most West Texas crudes, now available and anticipated from the numerous tests under way in the Hobbs field threatens to become a disturbing factor in the general crude market situation.

Importance of the Hobbs district as a major source of high gravity oil was enlarged late last week when the wildcat test of C. A. Fisher and H. W. Lowrie, Jr., Denver operators, on State land developed 1800 feet of 37° gravity oil in hole from broken sandy-lime formation at 5142-54 feet, thus giving Lea County its deepest oil horizon. This test is located 250 feet from the north line and 2310 feet from the west line of Section 11-18s-36e, and about nine miles northwest of the nearest production in the Hobbs field. The trend of production in the field is directed toward this wildcat, but nearly 1000 feet difference in producing horizons prevail. Fisher & Lowrie's State 1 was drilling in white sandy-lime formation at 5165 feet early this week, with the column of oil rising in the hole. The well logged the top of the salt at 2065 feet, and the top of the brown lime at 4465 feet, with a surface elevation of 3806 feet. An estimated flow of 225,000 cubic feet of gas was encountered at 4695 feet. R. R. Penn of Dallas is drilling the well on contract.

Operators in the Hobbs field have waited nearly 18 months since the discovery well on Midwest Refining Company's State lease scored the first oil and gas production before a market outlet became available. In addition to Humble Oil & Refining Company's eight-inch line, which represents a 40-mile extension from Jal field station, Atlantic Pipe Line Company is starting work on a 78-mile eight-inch line from its West Texas terminal at Midland, while Shell Pipe Line Company, The Texas Pipe Line Company and the Pasotex Pipe Line Company are slated to invade the field with extension lines when their respective producing affiliations make successful completions from tests now drilling.

Humble Oil & Refining Company's Bowers 1 is the largest oil producer the state of New Mexico has offered since the first commercial well was completed in late 1922. Bowers 1 is located at the center of the NE SE Section 30-18s-38e, and was completed last January rated at 8500 barrels of oil and 8,000,000 cubic feet of gas from sandy-lime formation at 4061-4106 feet. This well was given a brief production gauge May 6, and flowed 125 barrels of oil during the first hour, and 98 barrels per hour on the second hour through five-eighths-inch choke, with 900 pounds pressure recorded on the three-inch tubing, and about 1200 pounds bottom hole pressure. The full 24-hour flow mentioned above was made with the oil coming direct from the 6⅝-inch casing. The latter was cemented at 3962 feet, and the tubing was set at 4025 feet, after the well was given its initial testing late in January.

Five Tests at Casing Point

Five of the numerous active tests in the Hobbs field have reached the casing point above the brown lime horizon near the 2700-foot level, where drilling problems multiply overnight because of the presence of high pressure gas and very hard formations. Shell Petroleum Corporation's State 1-A, Section 32-18s-38e, is finding progress rather slow while drilling with rotary below 3550 feet, and the south offset held by the Ohio Oil Company's State-Northrup 1 has made little headway in the lime because of having to change from mud to Baroid to combat the heavy gas pressure. Shell Petroleum Corporation's McKinley 1, SWc Section 19-18-38, was drilling below 3350 feet early this week after cementing 5⅝-inch casing in lime at 2793 feet. Amerada Petroleum Corporation's McKinley 1, a south offset to the latter test, was running 9⅝-inch casing early this week in anhydrite at 2755 feet, and McKinley 2 was drilling at 1940 feet, being in the southeast corner of the 160-acre tract. Texas Pacific Coal & Oil Company's State 1-G, SEc Section 24-18s-37e, cemented nine-inch pipe in salt and anhydrite at 2815 feet, and early this week was installing connections to be prepared for heavy gas.

The productive limits of the Hobbs field are to be long and narrow, and evidence of a dip in the structure on the flanks of the northwest to southeast trend was offered early this week when Tidal Oil Company's Grimes 1, SWc NE SE Section 29-18s-38e, logged first salt at 1700 feet. This test has a surface elevation of 3655 feet, and is about 130 feet lower on the salt than the big well on the Bowers land, located one mile due west. Grimes 1 logged first anhydrite, which is also used as a marker, at 1546 feet.

Having completed the first of its trio of 55,000-barrel storage tanks on the Hobbs field pump station site, Atlantic Pipe Line Company was completing connections late last week to start running oil from the shut-in producer of Harry Walker Oil Corporation, and will take on additional completed and capped wells that the company has been authorized to serve.

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Gulf Coast Field Developments

JACK LOGAN, *Staff Representative, Houston, Texas*

Refugio Deep Sand Apparently Extends Westward

HOUSTON.—Another well was completed in the 5500-foot sand on the east side of Refugio the past week, making a total of 13 of the deep, high-gravity oil producers in the field. Furthermore, there are prospects for immediate development of oil production by four additional deep wells, two from the 5500-foot sand, one from the 5800-foot sand from which one semi-wildcat is already producing, and one from the 6500-foot sand that was recently proved productive.

The new completed deep well is Saxet Oil Company's Ryals 2. A joint of one-eighth inch perforated pipe was set in the sand, which was topped at 5451 feet and which was drilled into to total depth of 5467 feet. Six and five-eighths inch casing was cemented at 5454 feet. The well came in flowing 1000 barrels of oil and 2500 barrels of water daily through one-half inch choke, showing working pressure of 450 pounds. This is the second deep producer of Saxet Oil Company on the Ryals land. Number 1 has produced over 100,000 barrels. The new well is slightly lower on structure, and that is probably one reason for the large amount of water it is producing along with the oil.

The other two wells which give promise of oil production from the 5500-foot sand are Union Producing Company's O'Brien 3-A and Independent Oil & Gas Company's Mercy Academy 1. The former came in spraying oil and showing 1250 pounds pressure on the casing and 1900 pounds on tubing. The oil sand was found at 5414-22 feet; 8¼-inch casing was cemented at 5414 feet. Several of the formerly completed deep wells have come in originally as high pressure gas wells, later developing oil production, and similar performance is expected of this deep gas well. The second well mentioned above, Mercy Academy 1, tested one fourble of oil in five minutes on drill stem test at 5366-74 feet.

Aside from the above mentioned wells, there are two others, Union Producing Company's O'Brien 4 and Independent Oil & Gas Company's Helen Reilly 1, which are down to the 5500-foot sand.

The well which is showing for production in the 6400-6500-foot sand is Moss 1, Block 110, being drilled by Mission Drilling Company of Texas. On drill stem test at 6408-16 feet it built up pressure of 500 pounds, and after all but 14 fourbles of the drill pipe was pulled out it tried to blow out. The well is now shut in, waiting on orders. This well is located approximately 2200 feet southwest of Union Producing Company's O'Brien 1, discovery well of the 5500-foot sand, and is not as far off the edge of the field and within 1500 feet of the 3700-foot oil production. The only well which is producing from the 6400-6500-foot sand at present is Union Producing Company's Rose Lambert 1-A, and it is located considerably farther toward the edge of the field than the present test, being 3000 feet to the east and 4000 feet northward. The present test is 50 feet higher structurally than Rose Lambert 1-A, and it is 60 feet higher than Independent Oil & Gas Company's O'Brien 1, which also encountered the deep sand but which failed to develop commercial production. Rose Lambert 1-A came in April 1, 1930, producing gas and a little 42 gravity oil from sand at 6456-68 feet, and gradually increased until it was flowing around 160 barrels net oil with 500 barrels water two weeks later.

Sand May Extend Westward

The significant fact in connection with the prospective production from Mission Drilling Company's Moss 1, is that the 6400-6500-foot sand apparently extends on westward and upward, under that portion of the east side of the field wherein are located over half of the 3700-foot oil wells of the field. In the event the deep sand does extend that far and carries oil, it is likely that many of the 3700-foot wells will ultimately be deepened to the lower horizon. Foreseeing the possibility of deeper production, some of the operators have been using large casing in their 3700-foot wells. Independent Oil & Gas Company is an outstanding example. All of its 3700-foot wells are cased with 9⅝-inch pipe. Houston Oil Company, which like Independent Oil & Gas Company is among the most active operators in the field, has been using 8¼-inch casing in its 3700-foot oil wells.

The well which is in process of completion in the 5800-foot sand is Houston Gulf Gas Company's M. F. Lambert 2. From fairly promising sand at total depth of 5891 feet it was swabbed, but the swab was lost, and it was later reported that tubing would probably be pulled, and that bailer would be run. This test is 2000 feet due east of the same company's M. F. Lambert 1, only producer completed in the 5800-foot sand. It came in February 25, 1930, flowing from rich sand at 5879-84 feet, producing 30.9 corrected gravity oil. The production gradually increased until within a few days it had risen to approximately 1500 barrels daily. M. F. Lambert 1 is a semi-wildcat producer, located almost two miles northeast of the deep wells of the main field.

In the 3700-foot sand area there were three completions during the past week, including one oil well, one gas

April Production at Refugio

Operator—	No. Wells.	April Prod.	Total Prod. To End of April.
Benedum-Trees Oil Company	4	12,192	147,980
Dr. W. E. Hewitt	2	2,698	26,140
Houston Oil Company	25	198,533	1,036,221
Independent Oil & Gas Company	15	96,182	434,183
E. M. Jones	2	17,937	33,355
Korona Oil Company	1	2,870	2,870
Larcro Gas & Petroleum Company	3	25,737	50,818
Luling Oil & Gas Company	1	16,207	18,626
T. P. Morgan	1	7,534	15,662
Morgan Oil Corporation	17	237,147	950,664
Stroube & Stroube	1	3,196	.....
Pearson Properties, Inc.	7	76,374	427,688
Refugio Oil Corporation	2	77,921	498,916
Saxet Oil Company	15	87,152	644,487
Sun Oil Company	6	15,797	310,428
Texas Gas Company	1	744	24,926
The Texas Company	1	245	1,279
Union Producing Company	31	306,143	1,401,452
Total	136	1,184,615	6,100,343

producer, and a failure. The oil well is Houston Oil Company's Vance 2, which came in flowing 600 barrels pipe line oil daily through two three-eighths inch chokes, with 8¼-inch casing cemented at 3672 feet and one joint of screen set in the sand at total depth of 3692 feet. The same company's Fannie Heard 9, tested salt water at 3703-18 feet, plugged the bottom of the hole, and perforated casing at 3656-65 feet, completing the test as a dry gas well with 1350 pounds pressure. The failure was Sun Oil Company's Buckley 3, junked and abandoned at 3681 feet. E. M. Jones' Jeter 1-A had 600 feet of fluid in the casing, in a test of a sand at 3681-96 feet, but would not flow and will be put on the beam.

April Production Over Million Barrels

Total crude recovery at Refugio during April, 1930, amounted to 1,184,615 barrels, or an average of 39,487 barrels per day. The latter figure represented an increase over that for March, total poduction during that month having amounted to 1,192,052 barrels, or 38,453 barrels daily. From the discovery of oil there July 28, 1928, through April, 1930, the total crude recovery at Refugio amounted to 6,100,343 barrels. That production has been from a total of 136 wells. The production by companies during April and for all time is shown in an accompanying table.

Inasmuch as the deep wells, which are producing high-gravity oil, are of particular interest, a table is also given showing production statistics on each of the deep producers. April production from those wells aggregated 195,350 barrels, as compared with 143,916 barrels of high-gravity oil produced in March, reflecting the increased number of wells and the fact that completed wells have a tendency to increase in output. Total recovery from the Refugio deep sands, aggregating 465,894 barrels by the end of April, had assumed noteworthy proportions.

Bee County Wildcat Showing May Mean Pettus Extension

HOUSTON.—Cosden Oil Company's McKinney 1, wildcat test located in the north part of the southern John Pace survey, Bee County, approximately three miles west of oil production in the Pettus field, tested 500 feet of oil in 25 minutes May 10 on a drill stem test made at 3650-64 feet, the gravity of the oil being 47.6, corrected. Judged by the drill stem test, the wildcat gives promise of being as good a producer as any completed so far in the Pettus field.

A string of 6⅝-inch casing has been cemented with 200 sacks at 3650 feet, and the plug will be drilled about Monday, May 19, as the company plans to erect a warehouse and make other preparations for handling a producing well. Henry Wilson was the drilling contractor on this well. Cosden Oil Company, which has its headquarters in Fort Worth, is negotiating for a crude market outlet should the well fill expectations, and it may be made by exchanging oil with a company in another field.

Cosden Oil Company also owns a one-half interest in the wildcat test, Massengale-Freeland 1, being drilled by Rowan & Tong, Incorporated, San Antonio operators, and in the 300-acre lease on which the test is located. That wildcat is approximately one-half mile northwest of the promising test of Cosden Oil Company, being in the south one-third of the north John Pace Survey. Massengale-Freeland 1 was reported May 9 coring hard sand at 3725 feet. This well is reported to be high structurally as compared with the Pettus field oil wells.

Location of Cosden Oil Company's McKinney 1 is 360 feet from the south line and 300 feet from the east line of a 200-acre lease in the 350-acre McKinney tract. Like the above mentioned wildcat, it is high on the structure. The top of the Jackson was found in it at 2690 feet, whereas that formation was topped around 2900 feet in the oil wells of the main Pettus field.

Although a large portion of the acreage in the Pettus district has been leased, there is a lot of royalty trading in progress, and it is reported that deals of that nature consummated in Beeville during the past half week involved a total of over $500,000.

While the Cosden Oil Company test claimed a large share of attention in the district the latter part of the past week, another wildcat, Nichols Oil Corporation's Hicks 3 proved interesting also, testing wet gas through drill stem at total depth of 3619 feet. Following the test, the well was cored deeper. That wildcat is located one mile south of Normanna, and about seven miles south of Pettus field oil production. It is 300 feet south of Hicks 1, which was completed as a gas well at 1918 feet.

Within the proven area of the Pettus field Union Producing Company is rigging up Ray 9, which was located 600 feet south of No. 8, a producer, and 500 feet west of Humble Oil & Refining Company's McKinney 3. The latter, located 600 feet south of McKinney 2, a producer, is also rigging up.

E. S. Price et al's Laura Weiss 1, wildcat located in the Brooks & Burleson Survey, Bee County, 3½ miles southeast of proven oil territory, was drilling late last week in gumbo and lime at 1330 feet.

Grayburg Oil Company's A. J. Kimball 1, a wildcat seven miles west of Pettus oil production, cored shale at 3211-15 feet.

Houston Oil Company has abandoned Portis 1, which is one-half mile south of Pettus and 1½ miles southwest of the oil field, in the A. Smalley Survey. It had been drilled to 4976 feet. It was 54 feet lower on sub-surface structure than the Pettus field discovery oil well, Humble Oil & Refining Companys' McKinney 1, and is considered as defining the structure on the southwest. Following that unsuccessful test, Houston Oil Company has made location for J. R. Beasley 1 at the center of Block 36 in the town of Pettus. It is the first test located in the townsite.

Approximately three miles east of Pettus oil production in the J. Gomez Survey, Goliad County, Humble Oil & Refining Company's Lackey & Weldon 1 was drilling sandy shale at 4002 feet late last week.

In the V. Ramos Survey, Block 14, Goliad County, William F. Morgan et al's Pereira 1 has 10-inch casing cemented at 450 feet.

Production of Deep Wells at Refugio

Company and Well—	April Prod.	March Prod.	Total Prod. to May 1.
Morgan Oil Corporation—			
Mission-O'Brien 1	33,955	.....	33,955
Tom Heard 1, Block 3	11,060	7,398	18,458
Carlysle 1, Block 2	2,728	.....	2,728
Pearson Properties, Inc.—			
Ryals 1	38,769	13,357	52,126
Saxet Oil Company—			
Ryals 1	34,029	37,760	105,481
Ryals 2	.....	.....	.....
Union Producing Company—			
O'Brien 1	19,854	17,088	96,226
Mitchell 2	15,533	16,112	61,410
Powers 2	6,264	3,643	10,639
M. F. Lambert 1	32,911	48,558	84,624
Rose Lambert 1-A	247	.....	247
Houston Oil Company—			
Doughty 1, Block 23	.....	.....	.....
Tom Heard 1, Block 16	.....	.....	.....
Total	195,350	143,916	465,894

Note. The two Houston Oil Company wells were completed as high-gravity oil wells with high gas pressure, and they have been shut in temporarily.

Louisiana--Arkansas Field Notes

First Test of Woodbine Formation in New Section of Zwolle

SHREVEPORT.—The first test of the Woodbine formation in the new producing part of the Zwolle field of Sabine Parish, Louisiana, is ready and W. G. Gray this week is drilling in Nulton 1, NE NW NE Section 6-7-12 at total depth of 3665 feet, after setting a string of 4½-inch casing at a depth of 3657 feet.

Gray set casing after coring eight feet of chalk saturated with oil of a light gravity from 3657 to 3665 feet. The formation has been tentatively identified as Austin chalk and certainly is in the Woodbine series, geologists and paleontologists who have examined specimens of the core, declare.

As many of the pioneers in the Zwolle field, including H. D. Easton, the geologist, who mapped the structure as far back as 1922 resulting in discovery of oil in the chalk rock series in both east and West Zwolle, have contended that the major pay zone will be deeper than the chalk rock, the test is creating a great deal of interest. The chalk rock where present pay is obtained is an operating term including parts of the Nacatosh series, Marlbrook marl and Annona chalk. This pay horizon is from 2130 to 2725 feet.

No test of the Woodbine in recent years has been made in the eastern part of Zwolle. In the west part of the field (Blue Lake) R. L. Gay, Trustee, drilling Sabine Lumber Company 2, Section 23-7-14, cored a soft chalk saturated with oil from 3544 to 3576 feet which is regarded as the same formation Gray now has in his test nine miles to the east. Gay's Sabine Lumber Company 2 had been projected as a deep test and the formation encountered at this depth was not tested. Later a 12-mile extension producer was completed and Sabine Lumber Company 2 was temporarily abandoned at total depth of 3820 feet for the rig to be used in more critical tests.

It is also recalled that in 1927 L. M. Emlet and associates' old Bowman-Hicks 7-B in Section 14-7-14 sprayed oil at this horizon later going on to the 4000-foot level where it was abandoned.

Gray set 6⅝-inch casing at 2197 feet above the chalk rock and did not get a well in that horizon. The test topped the Blossom at 2823 feet, but as considerable secrecy has surrounded the drilling of the test, just where the Blossom was left is not generally known. The Blossom, however, is notorious in Zwolle for its salt water and special precautions were taken to guard against its inroads.

The Nulton test is a half mile south of Lion Oil Refining Company and D. M. Lide's three-mile western extension of the Zwolle east field completed in the marl and causing the present town-lot drilling campaign in Zwolle. This test was Sabine Lumber Company 1 in NE SE Section 31-8-12.

Two other important developments were recorded in Zwolle during the week. Benedum and Trees (Loring Oil Company), a half mile south of its Bowman-Hicks A-1, Section 34-8-12, completed Bowman-Hicks 2, in the extreme north edge of Section 3-7-12, at total depth of 2725 feet near the base of the chalk rock pumping 75 barrels of oil daily. This is the deepest producer of the east field and had been carefully nursed along after only small showings were first obtained.

Cores Three Feet of Sand

The second development was the coring of three feet of sand showing oil in the Wilcox series at a depth of 1147 to 1150 feet in Benedum and Trees' Peavy-Wilson 1, Section 21-6-13, six miles southeast of the older Zwolle area in Blue Lake. This test is intended for a total depth of 6000 feet unless pay is encountered higher and no test was made of the shallow showing. Every foot of the hole is being cored.

The third important Zwolle development was the revival again of Benedum and Trees' Bowman-Hicks A-1, Section 34-8-12, the 12-mile extension producer of Zwolle, which had gone dead recently for the second time. The well is pumping and flowing again at a rate of more than 1600 barrels daily from the original total depth of 2413 feet in the chalk rock.

The Cartersville field of Bossier Parish recorded three producers and three failures during the week. All three of the failures were edge wells to the east although one of them, Phillips Petroleum Company's Bolin 1, Section 38-23-11, deepened from the old gas horizon to 3091 feet, where it was dry, was a southern offset to a producer, again demonstrating the lenticularity of the Woodbine horizon of Cartersville. The other two failures were in the same section, being Arkansas Fuel Oil Company's Bolinger 3 and 4, the former abandoned as a salt water hole at total depth of 3497 feet, having a salt water sand from 3487 to 3489 feet, and the latter also being salt water at total depth of 3270 feet.

Two producers were added in the southwest part of the producing field. Arkansas Fuel Oil Company completed Barnett B-1, Section 36-23-12 at 3161 feet flowing 190 barrels daily through two-inch tubing, and Barnett B-5, Section 31-23-11, flowing 200 barrels from total depth of 3165 feet. The Texas Company's Wilkinson 6, also in Section 36-23-12, is flowing 250 barrels from a depth of 3168 feet.

Cartersville did not have any new locations made but the Sarepta-Spring Hill district three to six miles south and east where production is being obtained from the Blossom sand around 2700 to 2800 feet, accounted for four new locations. E. W. Bateman made location for F. R. Cook 1 and 2, both in Section 2-22-11. Ideal Oil & Gas Company has derrick up for Coyle 1, Section 24-23-11, a mile and half north of production, and Kansas City Supply Company is rigging up for Cochran 1, Section 36-23-11.

Four Zwolle Locations

Zwolle accounted for four new locations, one of them being several miles to the northeast of production. The latter test is San Miguel Oil Corporation's Blankenship 1, Section 20-9-11. Irving L. Wheatcroft, head of a British company, has derrick up for Sabine Lumber Company 1, Section 31-8-12, on the edge of Zwolle. In the same section Central Petroleum Company is rigging up for McCormick 1. Ohio Oil Company has made location for Bowman-Hicks 5 in Section 33-8-12.

Despite the fact that the first test made in the Holly district of DeSoto Parish, Louisiana, has just been completed as a salt water hole, five new locations were announced in that district. Arkansas Fuel Oil Company went to a total depth of 3175 feet before abandoning C. B. Scott 1, Section 32-14-13, three-fourths of a mile north of R. O. Roy's Farmer E-1, Section 5-13-13, which was completed recently at 2882 feet flowing 2502 barrels through 1⅛-inch choke for the first 24 hours. The well on gauge Sunday, May 11, made 751 barrels through the same sized choke. The oil is 41.88 gravity. Roy has set 6⅝-inch casing on two other tests in the same section, these are: Lee 1 and Whittaker A-1, casing having been set

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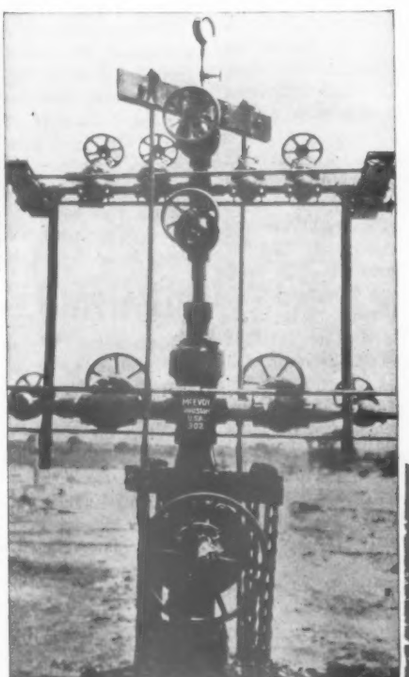

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at 2740 feet in the former and at 2730 feet in the latter.

Arkansas Fuel Oil Company is rigging up for C. B. Scott 2, offsetting the salt water hole. Roy made the other four locations. He is building derrick for Brooks 1, Section 8-13-13; has derrick up for Tracy 2, Section 5-13-13; and made locations for Fuller and Canard 1, Section 6-13-13, and for McGee 1, Section 8-13-13. Three locations were made in the Richland gas field and two in the Pine Island area of Caddo Parish.

Three wildcat tests were projected during the week in Arkansas, one being in the Sebastian County gas area of northwest Arkansas. This is Lavaca Oil & Gas Company's Cason 9, SW SW Section 21-8-30. During the week this company completed Braley 7 in Section 28-8-30 making 4,500,000 cubic feet of gas after three-inch tubing had been set on packer. Total depth was 2997 feet.

Two Union Wildcat Locations

Union County received the other two Arkansas wildcat locations. Arkansas Fuel Oil Company is rigging up for W. A. Burns 1, NE NW Section 14-18-17, and Carter and associates are rigging up for Burnside 1, SE NE Section 23-18-14, in the Hillsboro area. O. W. Estes has gone back into an old test, Telford 1, NW SW Section 35-17-15 which had been abandoned at 2674 feet, and is now coring at 2786 feet.

During the present week the Urbana district of Union County, Arkansas' deepest producing field, where the salt water encroachment is a hazard, should get another test. Simms Oil Company has set 8¼-inch casing on bottom at 3527 feet, with one foot of sand, in Simmons B-1, Section 10-18-13. In Section 15-18-13 J. W. Olvey is drilling hard lime at 3232 feet in G. G. Simmons 1. Simms Oil Company's Simmons A-1, Section 10-18-13, one of the two producers in Urbana, was off throughout the week and no runs were recorded. The discovery well of the district, Marine Oil Company's Thompson A-3, Section 10-18-13, on the latest gauge was pumping and flowing 4571 barrels of fluid daily, 64 per cent basic sediment and salt water.

In the same section with the two producers Lion Oil Refining Company having failed to get pay in the 3500-foot zone is now coring hard red beds at 4284 feet in Ballard 1.

Tidal Oil Company is moving in rig for Arkansas Timber 1, Section 3-16-14, Calhoun County, for what is reported to be a contemplated 5000-foot test. Cosden Oil Company after setting 8¼-inch casing at 3812 feet in Missouri Pacific 1, Section 13-9-19w, Pope County, is drilling ahead at 3863 feet.

In Marion County, East Texas, H. L. Hunt is coring at 3190 feet in Chatten 1, Grayson Survey. Shell Rock Petroleum Company is drilling at 2750 feet in Daugherty 1, W. W. Burris Survey, in the western part of Harrison County, Texas. Chapparral Oil Company is drilling at 3030 feet in Holt 2, Matthew Moore Survey, Shelby County, Texas, and in the same county Benedum and Trees are drilling anhydrites at 4065 feet.

Wyoming Wildcat Test Excites Wide Interest

Rock Springs, Wyoming.—Of more than usual interest in Wyoming wildcat operations this summer is the test on Wyoming structure which is to be drilled by Mountain Oil Corporation on 36-25½-115, Lincoln County. A few months ago the interior department approved the test as a major group development, and the well was spudded in last fall and then shut down for the winter. Operations have now been resumed and the test is to be watched with considerable anticipation by all operators in the state.

Major companies holding acreage on the structure are Mountain Fuel Supply Company, Texas Production Company, The California Company, Midwest Refining Company, Utah Oil Refining Company, Transcontinental Oil Company, and Arkansas Fuel Oil Company. Utah Oil Refining Company has purchased an option to buy the production from certain lands on the structure.

Gebo Dome Test

Thermopolis, Wyoming. — Gebo Consolidated Oil Company reports a substantial showing of light oil in its test on Gebo dome, Hot Springs County, Wyoming, at 1534 feet in the Frontier formation. Oil is coming through about 100 feet of cavings which the crew is endeavoring to clean out. Company reports that it has bailed more than 3000 barrels of crude from this well since it was shut down last fall.

Start New La Barge Test

Kemmerer, Wyoming.—Charles S. Hill and associates have started a new well on their holdings in the LaBarge field north of here. It is to be an offset to Texas Production Company's recent completion which had an initial production of 60 barrels.

Ogden-LaBarge Oil Company is resuming operations in its deep test northeast of the proved area of the field which has been standing at 4985 feet. Location is in 18-27-112.

It is reported that Piney-LaBarge Oil Company has completed a well good for 30 barrels on its holdings in the field. Total depth is 950 feet.

Abandon Muddy Creek Test

Evanston, Wyoming.—The deep wildcat test drilled on Muddy Creek structure, southwestern Wyoming, has been abandoned by The California Company at a total depth of 3815 feet. There were no worthwhile discoveries reported in this test.

Utah Test Is 2050 Feet

Salt Lake City. — Utah Southern Oil Company's test on Section 26-21s-23e, in Grand County, is last reported to be drilling in the Wingate sand at 2050 feet, near the top of the red beds. Depth to the top of the objective Pennsylvanian horizon, is estimated to be 2300 feet. This is a test of the shore lines of the Eastern Utah salt basin, and the Pennsylvanian horizon are expected to be largely shales and sands. Test wells previously drilled in this part of Utah have been out toward the center of this old salt basin, as is evidenced by the continuous lime and salt which have made up the Pennsylvanian section.

Drill Deeper in Utah Test

St. George, Utah.—It is announced here that W. A. Ross and A. A. Pare representing Canadian capital, have taken over Mid-American Oil Company's holdings near St. George, Utah, and that they will install new cable tools to sidetrack material lost in the test well, clean it out, shut off water, and drill deeper for a test of the field's possibilities. The hole is bottomed around 2000 feet where developments were held up by mechanical difficulties.

Colorado Deep Test

Denver.—Deepest well to be drilled on the Pipe Springs structure in southeastern Colorado has proved a disappointment to Continental Oil Company as far as its development into a producing well is concerned as it has drilled into salt water at 6015 feet. The water was found below a bed of granite wash at 5900 feet. Bottom is 2300 feet below the top of the Pennsylvania formation and has cut a number of water-bearing or dry sands, but there has been no worthwhile showings. Inasmuch as the well is furnishing considerable geological information it will be continued as long as the drilling is good.

Border Field Has 11 Wells

Coutts, Alberta. — In the new border field which lies partly in Montana and partly in southern Alberta, there are 11 active wells in Toole County, Montana, and six in Alberta. The last completion is Cosmos Petroleum Company's well which is making about 300 barrels per day but which is still fighting for a complete water shutoff. Until this is accomplished the well will not produce all it is believed to be worth.

The next two wells which will be completed in the field are both on the Canadian side of the line. The Commonwealth Oils, Ltd., test is drilling below 2250 feet in Section 3-1-16, and the Dalco Oils, Ltd., is drilling below 1950 feet in Section 11-1-16.

Montana Wildcat

Lodge Grass, Montana.—Fred Whiteside interests will resume operations at their well on a structure four miles southwest of here. The well is standing at 3000 feet where it has been bottomed for some time, pending the completion of financing and leasing. People in Lodge Grass, Billings, Sheridan and Hardin are financially interested in the venture.

News From California Fields

BRAD MILLS, *Staff Representative, Los Angeles, California*

Reveal Navy Department's Plans to Safeguard U. S. Oil Reserves

WASHINGTON, D. C.—Any attempt by the Standard Oil Company of California to develop its holdings in Naval Reserve No. 1, in Kern County, California, will be the signal for a bitter drilling campaign by the United States government, which has adopted a policy of drilling two wells for every well Standard Oil Company of California may drill.

Plans of the navy department for safeguarding its interests in the reserve were recently laid before the House Appropriations Committee by Rear Admiral H. H. Rousseau, Director of the Naval Petroleum Reserves. To enable the department to carry out its program, Admiral Rousseau urged that there be made available $10,000,000 for use at any time, with which to initiate drilling operations should they become necessary. This amount is carried in the navy department appropriation bill for the coming fiscal year, now before congress.

Reserve No. 1, it was explained by the admiral, is by far the most valuable petroleum reserve that the government has. It comprises 38,068 acres, of which 32,086 acres are owned by the government and 5228 acres of the 5982 privately owned, are possessed by the Standard Oil Company of California. The oil structure also extends outside of the limits of the reserve over several sections controlled by the Standard Oil Company of California. This structure, known as the Elk Hills field, is conservatively estimated to contain 600,000,000 barrels of recoverable oil on the basis of 30 per cent recovery only.

The only private land inside of the reserve on which there is production are Sections 36 and 31 in the center of the reserve. Section 36 is in litigation to determine whether it was known oil land when the original survey was approved by the land office in 1903. The entire present production from both sections is only about 15,000 barrels a month.

"As long as the present conditions continue," Admiral Rousseau told the committee, "there is no possibility that any drilling campaign will be started in Reserve No. 1 by Standard Oil Company of California. The land that that company owns in the reserve is extremely well situated for obtaining large recovery, and this company considers that they are very rich sections. The navy department and the president's Oil Reserve Commission had the matter up with the president of the Standard Oil Company of California several years ago, who stated that his position is that he desires to follow along with the government's policy of maintaining the status quo just as long as possible, but that he is governed primarily by the interests of his stockholders, and that when the time comes when they can not get sufficient oil for their refineries anywhere else, they will come into Reserve No. 1 and drill for it.

Will Delay as Long as Possible

"However, he says that they will be glad to delay taking this step just as long as possible. He says that his company's policy is the same as that of the government, and that he wants to hold this land in Reserve No. 1 as a reserve for the Standard Oil Company of California; but he clearly indicates that the time when the Standard Oil Company will feel obligated to drill for its own interests will come much sooner than it will be necessary for the government to drill its land in this reserve—which will not be until the government can not get oil any where else at a reasonable price. So the navy department feels that it is very important to take steps as soon as possible to prolong the life of this reserve to the greatest possible extent, and it has felt all along that the most practical way of doing this will be to make it as undesirable as possible for the Standard Oil Company of California to start drilling operations in Reserve No. 1.

"Two years ago, when the secretary of the navy appeared before this committee, he stated that, in his opinion, this could be best accomplished by announcing and following the policy of drilling two wells for every well drilled by the Standard Oil Company of California, and that he felt it was essential that the executive branch of the government have authority to start drilling whenever the Standard Oil Company of California indicated its intention to drill.

"The $10,000,000 asked for, it was ex-

Santa Fe Springs Production Continues Downward

LOS ANGELES.—Production at Santa Fe Springs was held up during the week by opening up of a group of producers which either had been beaned back or entirely shut in. New production fell considerably short of the natural field decline and there was further proof that the output is headed steadily downward, regardless of the number of completions in the known deep zones.

The five completions during the week added only 2000 barrels, with the decline probably doubling this figure. Of the five wells finished, one was completed in the Meyer zone, two in the O'Connell zone and two in the Clarke zone. Associated Oil Company succeeded in placing Dewenter 7 on production in the Clarke zone at 7900 feet, with an initial flow of 500 barrels on the compressor. Union Oil Company's Farwell 20 was completed in the O'Connell zone with an initial production of 650 barrels. The company's Bell 55 came in from the Clarke zone at 7939 feet with a flow of 680 barrels, being far from the more sensational completions of six months ago.

Shutin production has decreased from around 50,000 barrels to 35,000 barrels during the past month, giving the deep zones an absolute potential production of not more than 160,000 barrels. To this should be added production of the shallow zones, totaling about 25,000 barrels.

Active drilling wells total 57, of which many are being reconditioned. It is difficult to conceive such a sharp drop in activities during the past six months, active drilling wells at the end of November totaling more than 200. Only one new well is being rigged up, with 25 idle drilling wells. About 20 wells are being reworked, deepened and plugged back. Wells actually drilling ahead have dropped to 30. As production drops sharply in many deep zone producers, these wells will be reconditioned by deepening or plugging back, the process depending upon the zone which is now producing.

Interest in the extremely deep Hathaway zone development waned considerably for several weeks, but there is still a belief that this sand will prove productive on top of the structure. Wells tested between 8300 feet and 9000 feet have been on the flank of the structure. The Texas Company's Patterson 10 swabbed salt water at 9068 feet, following the cementing of a string of five-inch casing at 8280 feet. This company probably will drill Wickman 2-B to the deeper zone, not being entirely satisfied with the failure of Patterson 10.

plained, would not be sufficient to carry out an extensive drilling program but would be enough to make a start. There are 14 miles of boundary line open to attack, and if first and second line wells were put in in the ordinary spacing, it would require about 225 wells, the entire cost of which would be in the neighborhood of $13,500,000. All these wells could not be drilled in one year, however, so that the $10,000,000 would not be expended before congress could make an additional appropriation, if necessary."

Kettleman Hills Being Held Under Curtailment

Coalinga, California.—With only five active drilling wells at Kettleman Hills, this great light oil producing district is being held under control even better than anticipated when curtailment measures were applied a year ago. Offsetting the small number of active tests, however, is the fact that two of the six producing wells are flowing "outside the agreement" and may ultimately lead to an extensive drilling campaign.

Associated Oil Company is preparing to complete Whepley 1 as an offset to Petroleum Securities Company's Felix 1 and Standard Oil Company's No. 35-J, both located on leases not definitely bound by the agreement to shut in producers over the Temblor zone. Whepley 1, if placed on production, is not violating provisions of the agreement, because it is specifically stated that whenever a lease is being drainec by offsets retaliatory measures are permissible.

General Petroleum Corporation has encountered streaks of oil sand at 7500 feet in Ochsner 2 below a formation which was so hard that only very short core recoveries were possible. Core recoveries as little as one foot were obtained between 7420 and 7450 feet.

Field production is being held to about 16,000 barrels from six wells. Of this total Continental Oil Company's Elliott 12-8 is producing 4000 barrels, Petroleum Securities Company's Felix 1 1050 barrels, Milham Exploration Company's Elliott 1, 2700 barrels, and Standard Oil Company's No. 8-1p, 3350 barrels, No. 81-11p, 2800 barrels, No. 35J-38, 2100 barrels. Average gravity of the oil is 61.4 degrees. Gas production from the six wells is 380,000,000 cubic feet.

Los Angeles.—Standard Oil Company has added to its holdings in the Newport Bay district, recently acquiring a 1000-acre tract from the Irvine Ranch Company. The land skirts the ocean but extends inland a good distance. A location has been made on land which is partially submerged at high tide. Standard Oil Company has observed that wells drilled on both sides of the bay have shown oil and gas, but that water has prevented commercial production. Locations recently made by the company are based on the theory that a line running between these unsuccessful tests may mark the proper "high" of the structure.

Kill and Deepen North Beldridge Deep Test

Taft, California.—Belridge Oil Company will kill and deepen its No. 15, an important deep test in the North Belridge field, following a none too successful production test in the top of the Temblor sand at 5088 feet. The well was on production for several days, averaging 30 barrels of 58 gravity oil and 3,700,000 cubic feet of gas.

Regarded as the sensation of the year, even at its present depth, this well was a distinct disappointment. The top of the Temblor sand has not produced at a high rate at Kettleman Hills, indicating that the action of No. 15. may not be entirely out of line after all. If additional hole fails to improve production, the Temblor zone in this district may not be as important as generally believed.

Failure of the well resulted in the postponement of plans of at least three companies to drill to the Temblor zone, this development alone probably being as significant as the small production obtained. A rush to develop another extremely light oil producing district would go a long way toward disrupting a none too stable curtailment scheme.

Ventura Little Affected By Curtailment Program

Ventura, California.—The Ventura Avenue field, with 31 active drilling wells, has been affected less by the curtailment program than the average flush field in other parts of the state. More than 20 drilling wells have been suspended until the demand for oil is better. About 100 producing wells have been shut in to meet provisions of the curtailment program.

Completion of Associated Oil Company's V. L. W. 11 as a 3900-barrel well at 7371 feet gives the undeveloped sections of the field a better appearance and indicates that a much larger potential production is possible.

Two weeks ago this company completed Lloyd 57 with an initial production of 5400 barrels, the first large well brought in for nearly a year. Both of these new wells are a considerable distance from production.

Tideland Development Promised for Rincon

Ventura, California.—While tideland development at Rincon is not expected to reach the proportions it has attained at Elwood, several locations will be made outside the mean high tide line and at least a fair production should be developed from ocean wells during the latter part of 1930. General Petroleum Corporation discovered that the trend of production extends westward and that most of the structure lies under water, the log of Ferguson 2, located about 1800 feet out in the ocean, having revealed a rising up outside the mean high tide line. It was never possible to develop a large production from wells drilled along the ocean, more recent developments indicating that the present output is coming from edge leases.

Failure of Chanslor-Canfield Midway Oil Company's Hobson A-2 on a production test at 6855 feet was a disappointment, but the poor showing probably was caused by a poor cementing job of the 8⅝-inch casing at 6640 feet. This well is located more than two miles northeast of present production and a discovery of oil in commercial quantities at this point would be very important.

Venice Development Not To Be Intensive

Los Angeles.—Completion a week week ago of Ohio Oil Company's Recreation Gun Club No. 2 as a 1550-barrel producer gives the new Venice field its second well and has served to increase the difference in opinion regarding the importance of the Los Angeles basin's newest area. The oil is 25 gravity and clean, but such a production is not considered large enough to warrant intense development in this townlot field.

A string of 8⅝-inch casing was cemented at 6050 feet, or 100 feet off bottom, but only a small part of the cement was drilled out below the shoe. This small amount of open hole may account for the small production. Top of the oil sand was found higher than in the discovery well, indicating a rising of the structure toward the ocean and perhaps to the east.

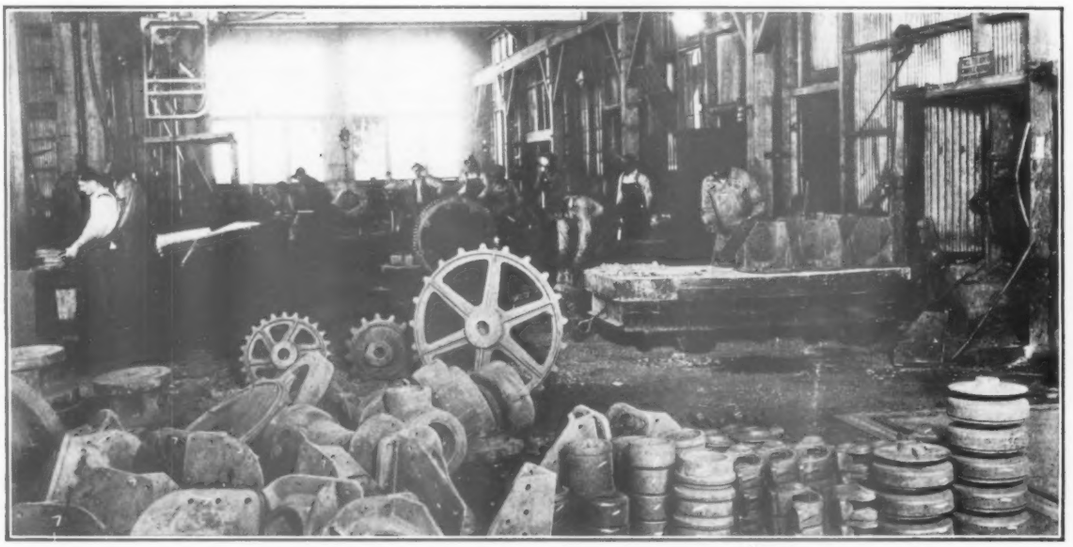
The history of discovery wells in other Los Angeles basin fields reveals the fact that in nearly every instance the first producer has been a questionable one. When this fact is considered, the first wells completed by Ohio Oil Company at Venice stand out as little short of sensational and may eventually lead to development of a large production.

Union Oil Company's discovery of a good oil sand at 3460 feet in No. 1, located southeast of the discovery well, practically proves the structure to rise toward the southeast and makes the entire field look much better. Meanwhile, several new locations have been made and the field probably will be the second most active in the Los Angeles basin within a few weeks.

Los Cerritos District

Long Beach, California.—Increased activity in the Los Cerritos district of the Long Beach field and continuation of drilling in the southeast sector have firmly established this area as the most active in California, despite the number of deep wells completed during the past two and one-half years. Twenty wells are under way in the Los Cerritos district, an area which was slow to be developed during the original drilling campaign, and only the completion of a few good wells is needed to add to the activity. Many wells will be reconditioned in this section, following the recent recompletion of a good producer at 5900 feet.

TESCO HIGH TEST STEEL



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(Continued from page 35)

below tops of the caissons. These heavy beams are welded to vertical H-beams of the same size, running from this point up through the center of the caissons and supporting the derrick floor at an elevation of 30 feet. Diagonal eight-inch H-beams form an "X" on each of the four sides and are welded on the lower ends where the 12-inch horizontal and vertical H-beams just described are welded in the center of the corner caissons, and on the upper ends to 24-inch horizontal I-beams resting on the caissons and supporting the superstructure. These diagonal braces are welded together where they cross.

Resting on top of the eight-foot corner caissons, 24-inch I-beams form a square and partially support the superstructure, besides acting as a brace. They are welded together at the ends.

At a point about midway between the 12-inch horizontal H-beam braces, at an elevation of 3.5 feet, and the 24-inch horizontal H-beams resting on top of the corner caissons, are placed short 12-inch H-beam horizontal braces which extend from a point a short distance within the corner caissons to a point in the concrete in the 10-foot center caisson. These short braces furnish a margin of strength which might be vital in case of storms.

The 12-inch vertical H-beams, extending from a point 17½ feet below the top of and in the center of the eight-foot corner caissons to an elevation of 30 feet, form the level for the derrick floor and provide a six-feet space between the top bracing and derrick floor which is convenient for workmen and gives access to to well connections in the cellar.

Reinforcing the heavy 24-inch horizontal I-beams which form a square on top of the eight-foot caissons is a veritable network of eight-inch I-beams, all placed horizontally and welded to these 24-inch beams on the outside ends and to a smaller eight-inch I-beam square on the inner ends. This smaller inner square is large enough to leave the cellar open. All connections are welded, practically forming a one-piece network on top of the caissons.

Bankline Oil Company now has under construction in the Elwood field a derrick and well foundation of the cofferdam type which is a radical departure from the smaller caisson type used along the coast. The foundation essentially consists of a round cofferdam 37 feet in diameter formed by sheet piling, reinforced by heavy H-beam piles and steel rings and filled with rock.

The outer shell of the cofferdam is made from special, 11-inch alloy sheet piling which was imported from Germany. It is a rust-resisting molybdenum steel which will be affected little by salt water. This sheet piling was driven to the hard shale. It has a very thick web and proved suitable for this type of structure.

The outer shell of the cofferdam is reinforced with four heavy 14-inch H-beams which are used both as piles and as derrick supports. They form a 24-foot square and are driven into the hard shale. In forming a 24-foot square within the cofferdam, it was obviously necessary to make the diameter of the main structure considerably greater than one side of the rectangle.

The sheet piling and general structure are further reinforced by three 2½-inch steel rings, welded at different levels between the top and water line. These rings also contact the four 14-inch H-beams used as piles and derrick supports.

The bracing includes heavy steel beams placed diagonally near the top of the structure and tied to the vertical H-beam piles, forming an "X" on each of the four sides.

A 10-foot cellar is provided in the center and near the top of the 37-foot cofferdam, with a 30-inch conductor pipe extending from the top to the hard shale.

The great tube is filled with rock of all sizes which was brought from quarries on the Santa Cruz Islands, lying about 30 miles in the ocean. The filler varies in size from sand to stones weighing several tons.

To give added strength, rock is being dumped into the ocean on the outside of the cofferdam, forming a heavy wall from the ocean bottom to a point near the water line.

The foundation is built in about 12 feet of water and is 600 feet from the mean high tide line. Although a massive structure, the cofferdam probably will not be more susceptible to storms and wave action than the smaller caisson type. In addition, the designers believe it will carry a greater margin of strength.

A survey of tideland activity along the Pacific Coast between Ventura and Point Concepcion reveals several variations from the basic caisson types of well foundations described, but the general plan of construction tallies closely with either Barnsdall Oil Company's or General Petroleum Corporation's five-tube type.

The large number of wells now being drilled in the Pacific Ocean and possibility of increased activity outside the mean high tide line make this method of drilling a very important addition to California's field operations.

Three typical ocean wells at Elwood

Minority Opposition Endangers California Curtailment

(Continued from page 29)

brought to the desired level at the end of some definite period. Excess stocks have caused much worry and until these are reduced, production of crude oil at an excessive rate will immediately be reflected in a weaker market and distress gasoline. Gasoline stocks are considered far too high to insure stabilization in this phase of the market. Large shipments of this commodity have left California at a price below the cost of manufacture. Since gasoline sales have been the chief source of revenue for many companies, it will be only through the reduction of stocks that a reasonable price can be established.

Opponents of the gas conservation law are now pointing out that the evils of the statute are obvious, and that since the major companies which sponsored the measure were anxious to have it become a law, they should be satisfied. The confusion caused by the restraining order at Santa Fe Springs, which was issued under the law, has been used as an argument against state or government control of the oil business in any form. There can be no successful denial of the fact that the temporary injunction did confuse the issues at Santa Fe Springs and that as soon as it became effective the umpire's orders were less effective. Prior to the injunction, production was within striking distance of the allowable set by the umpire and field committees. Immediately following the attempted enforcement of the restraining order, a few operators were confused but many seized the opportunity to produce more gas and oil than they had produced under the umpire. The counter-injunction obtained in the higher court by the Wilshire group did much to nullify the constructive work accomplished by the umpire's office. Developments at Santa Fe Springs indicate that if the oil industry can control itself without outside aid, they will be benefited in the end.

Darst Creek Operators Adhere to Proration Quotas

SEGUIN, Texas.—On the western edge of the north-central portion of the Darst Creek field, in the vicinity of Magnolia Petroleum Company's M. E. Roamel 1, large producer from chalk formation along the subsurface fault, two wells were completed early this week, and several others were ready to be drilled in.

The two completed wells were Abercrombie et al's Dix-McKean 2 and Dix-McKean 3, both of which are producing from Edwards lime. Casing was cemented in No. 2 at 2518 feet, and the well came in flowing 75 barrels per hour, while No. 3 came in flowing at the rate of 100 barrels per hour.

Gulf Production Company et al's Dix-McKean 2-A has cemented casing at 2515 feet over Edwards lime, and the same interests' Dix-McKean 3-A has cemented casing at 2180 feet, preparatory to making a test in the Austin chalk.

Louisiana Oil Refining Corporation's Dix 5, east of the large well of Magnolia Petroleum Company, has casing cemented at 2496 feet.

Sun Oil Company and Empire Gas & Fuel Company's Manford 2, located in the "Manford area" approximately three miles northeast of the main Darst Creek field, slightly northeast of Simms Oil Company and H. C. Cate's two crevice wells, was drilling at 2514 feet late last week.

In the southern portion of the main producing area at Darst Creek The Texas Company's Dallas Wilson 8 was swabbed in May 9, at the rate of 1150 barrels daily from Edwards lime total depth of 2602 feet, the crude testing 38.5° at 92 degrees temperature. It was The Texas Company's first test on the Dallas Wilson lease that discovered oil production at Darst Creek in the summer of 1929.

Pumping operations on Magnolia Petroleum Company's second crevice well on the R. C. Appling farm, located on the east flank of the Darst field, had to be halted during the past week after recording an initial output of 25 barrels of oil per hour at 2460 feet because of rotary mud from offset drilling test breaking in. Cranfill-Reynolds Company's Appling 2, a close offset, is believed to be supplying the mud to the above new completion while drilling in hard Taylor marl at 2450 feet after encountering several crevices that caused the losing of rotary returns. Landing of pipe in the latter test is expected to restore Magnolia Petroleum Company's Appling 2 to a commercial producer, and pumping operations have been suspended until such relief takes place. Magnolia Petroleum Company's Appling 1, which was completed as a big producer last October from crevice at 2532 feet, developed 40 per cent water late last week when pumping and flowing about 800 barrels daily.

Strict adherence to allowable daily production quotas by operators in the Darst field is reported since the output of the field was advanced from 12,698 to 23,829 barrels effective May 1. The production of the field is being prorated voluntarily by the operators, with the exception of the three pumpers held by Luther C. Turman, Fort Worth operator. The new production allowance affords the relief that the majority of the operators desired. Magnolia Petroleum Company has fallen in line with this view, and is holding its big producer on the M. E. Roamell crevice to less than the quota earned by proration rules.

Humble

Houston. — Sloane Prospecting Company has abandoned its wildcat test, Mrs. J. Ulrich 1, located in the south half of the Hannah Nash Survey, Harris County, on what is frequently called the Cedar Bayou prospect. The drill was stopped at 6221 feet in water sand.

There were several oil and gas showings in the well. At 4475-76½ feet sand and shale with oil show were encountered; sand and shale with oil show was logged at 4781-93 feet; oil and gas showings were found in sandy lime at 4945 feet; and there was a slight oil show at 5935-60 feet.

Location of this wildcat was 1535 feet south of the north line and 1450 feet east of the west line of the south half of the Hannah Nash Survey.

Following abandonment of the above test the same company has made location for a second well, Davis 1, at a point approximately 2100 feet northwest of Ulrich 1.

This area is approximately five miles northwest of Barbers Hill dome. The activity of Sloane Prospecting Company is based on favorable indications found recently with seismograph, although the prospect is five or six years old.

Barbers Hill

Houston.—Two wells were completed at Barbers Hill during the past week, both on the east side of the field, and among the 28 drilling operations in the field at present there are numerous tests nearing productive horizons and several semi-wildcats down at interesting depths.

Sinclair Oil & Gas Company's Wilburn 6 came in flowing 1000 barrels of fluid, 20 per cent b.s. and water, and 80 per cent 27.8° oil, when 210 feet of screen had been set at total depth of 5249 feet. F. L. Thompson's Wilburn 3 came in flowing 1000 barrels of oil daily through 2½-inch tubing, with 85 feet of screen set at 5103 feet.

Humphreys Corporation had not yet set screen May 12 in A. E. Barber F-1, south offset to its Kirby A-8, semi-wildcat prolific producer of the northwest flank of the dome, but had drilled the plug after cementing 7⅝-inch casing at 6445 feet, and was reported in hard shale at 6462 feet.

Humphreys Corporation's Morgan 1, semi-wildcat on the north flank of the dome, one mile from the nearest deep producer, the same company's Kirby C-1, was drilling sand and shale at 6391 feet May 12, and Humphreys Corporation's Scott 2, also on the north flank, 3000 feet northwest of Kirby C-1, was drilling sandy shale at 5448 feet. The oil sand producing from around 5200 feet on the east and northeast sides of the field were not present in the north flank deep tests.

Yount-Lee Oil Company's Zadie Fisher 1, virtual wildcat on the west flank of the dome, approximately 6400 feet south of Humphreys Corporation's Kirby A-8, cored sand and shale at 6747-53 feet. That test has had various oil showings, and if deeper production is not obtained, it may be completed as a commercial producer around 5750 feet.

Magnolia Hit By Storm

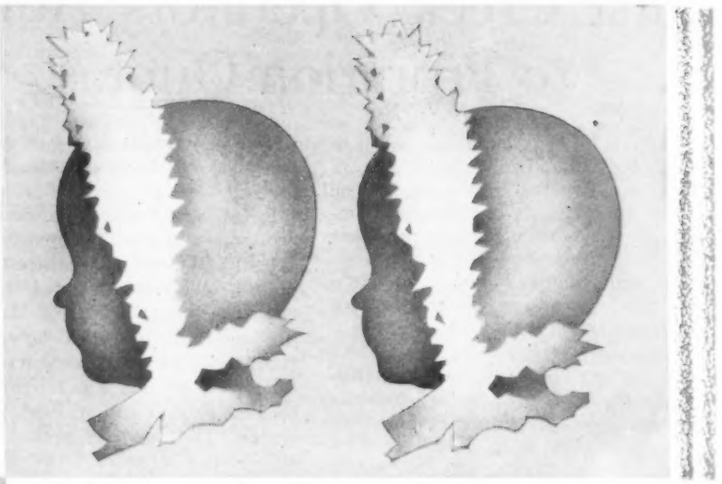
Ranger, Texas.—Toppling 15 out of 17 derricks on Magnolia Petroleum Company's Morris-Miller lease, Coleman County, gave a high percentage of hits to the windstorm that swept the Central West Texas district May 6. A number of other companies sustained derrick losses throughout the district, including seven for the Magnolia Petroleum Company in the Ranger-Olden section of Eastland County.

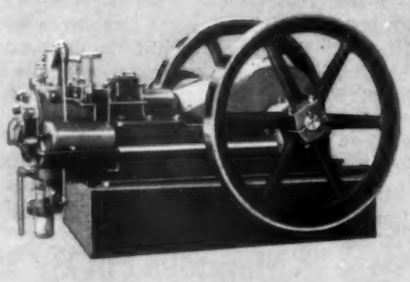
Correction

Alberta Pacific Consolidated Oils, Limited, Smith and Over 1, recently spudded in on the Spring Coulee structure, is on acreage owned jointly by this company and Frontier Developments, Ltd., the latter company being the Canadian subsidiary of Canadian Exploration Company, a Colorado corporation, of which A. E. Humphreys is president.

In THE OIL WEEKLY of April 25, it was erroneously stated that Canadian Exploration Company is a subsidiary of Humphreys Corporation of Texas, Colorado and Wyoming. Humphreys Corporation operates in the Gulf Coast of Texas, and has no interest whatever in Canadian Exploration Company or its subsidiary, Frontier Developments, Ltd., or in Alberta Pacific Consolidated Oils, Ltd., which is also a Canadian corporation. Mr. Humphreys is vice president of Humphreys Corporation but there is no community of interests between these two companies.

This Unit Is Really TWINS





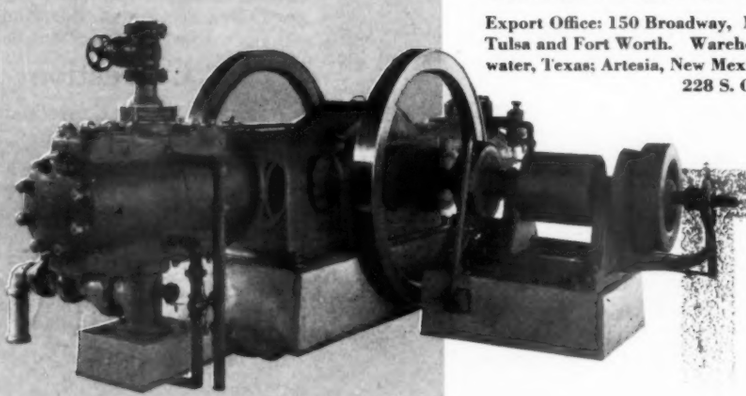
THE CLARK "40"

But Works for ONE Pay Check

The CLARK "40" Pumping Engine and Compressor Unit is an economical machine which does two kinds of work—enabling operators to handle small leases in the most profitable manner by pumping wells or putting them on air lift—at a cost in keeping with small production. Either the exceptionally sturdy CLARK Pumping Clutch or Compressor End can be used without change in engine bedplate. Compressor cylinders are available in various sizes.

CLARK BROS. COMPANY Olean, N. Y.

Export Office: 150 Broadway, New York City. Mid-Continent Sales Offices: Tulsa and Fort Worth. Warehouses: Tulsa, Oklahoma; McCamey and Sweetwater, Texas; Artesia, New Mexico. California: Smith, Booth, Usher Company, 228 S. Central Ave., Los Angeles.



The new CLARK "40" is a highly perfected 4-cycle engine. Fully enclosed and automatically lubricated with filtered oil. Use of crosshead eliminates piston slap. Moderate speed—200 R. P. M.—gives durability.

COMPRESSOR *and* PUMPING ENGINE UNIT

CLARK

Underground Surveying
Now Standard Practice in California

By BRAD MILLS
Staff Representative

ALL deep drilling in California is now controlled by underground survey methods. The verticality of drilling wells is usually tested every few hundred feet by acid bottle or other drift indicator, and when the well is found to have departed far enough from vertical to cause a considerable drift if continued, an underground survey is called for to determine the direction in which the well is going, and the location of the bottom of the hole.

If the survey shows that the well is going down dip, then by careful attention to drilling methods, the well may be drilled back to vertical, or, if this does not succeed, a whipstock may be oriented at the bottom of the hole to throw the well back toward vertical. Finally, if the well persists in its down-dip direction to drift, the inclined part of the hole may be plugged and redrilled. In addition to the use they make of surveys for controlling the drift of wells, most California operators survey their wells before setting pipe, and there is now a great deal less trouble with water shut-offs than formerly.

Underground Survey Apparatus

One of the best known systems is that invented by Alexander Anderson of Fullerton, a pioneer in this work, who has been surveying oil wells in California since 1924.

The Anderson apparatus comprises two cooperating units; first, the survey machine, which is run on drill pipe and automatically takes readings in the well at fixed time intervals, and, second, a set of sighting devices in which are clamped on the pipe in the derrick to keep tract of directions in which the machine is pointing while it is being lowered into the well.

After the survey machine has been attached to the bottom of the first stand of drill pipe and while the stand is hanging over the hole, a sight hole in the lower end of the machine is pointed at a flag outside the derrick to orient the machine. While the machine is held in this oriented position, a sighting device is pointed at the flag and is then clamped to the drill pipe near the top of the stand just below the elevators. The machine is then lowered into the well, a second stand of pipe is stabbed and tightened up, and a second sight is lined in and clamped near the top of that stand. The rotation of the first sight, right or left from the flag, is then measured and the first clamp is removed from the pipe; and the pipe is held stationery for about a minute while the survey machine makes a photographic record at the bottom of the first stand. The second stand is then lowered, the running of the pipe being controlled by a time table.

The routine of lining in and clamping a sight near the top of each stand, measuring the amount and direction of rotation of the pipe after each sight has reached the derrick floor, and holding the pipe steady while the survey machine operates is continued until it has reached bottom, and the survey readings have been completed.

The survey machine takes one reading every four minutes or say 48 minutes per 1000 feet of hole where 12 readings are recorded. To survey a 600 foot well takes four hours and 48 minutes for 72 readings.

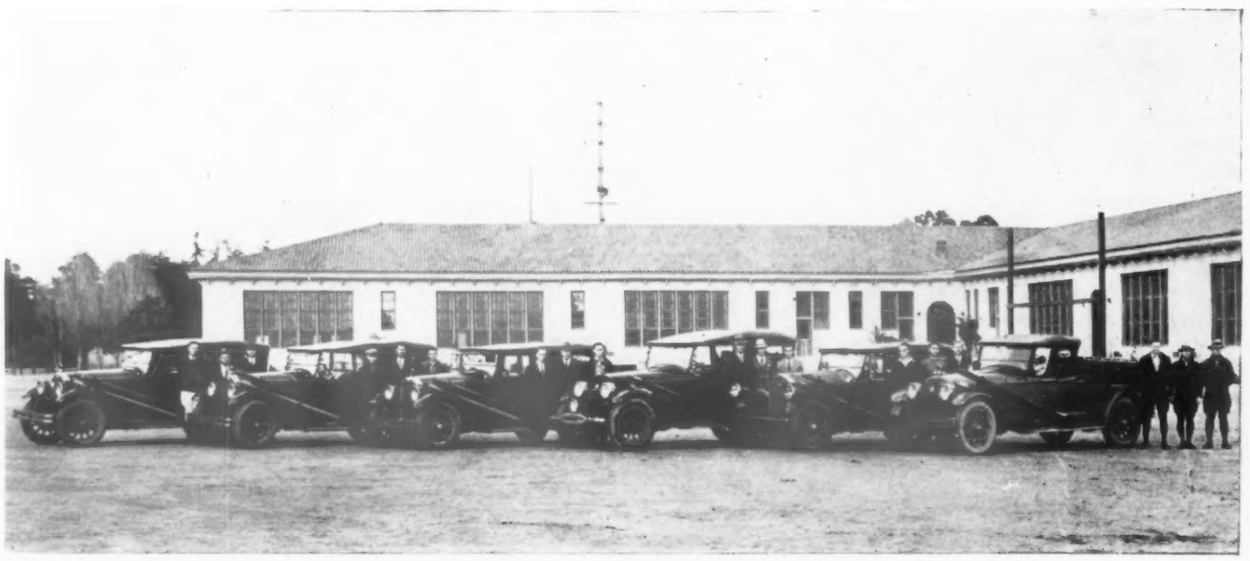
Results of survey are reported to the oil company at 11 a.m. the day after the survey is run.

How Checked

It might seem that there is no real way in which an underground survey of an oil well can be completely checked as to accuracy. However, since surveying has become universally adopted in California, operators have found many different means of checking them.

The inclinations of almost every well surveyed have already been measured with the acid bottle, and these readings have provided innumerable checks on readings for inclination.

During the several years in which Anderson's apparatus has been in use, a num-



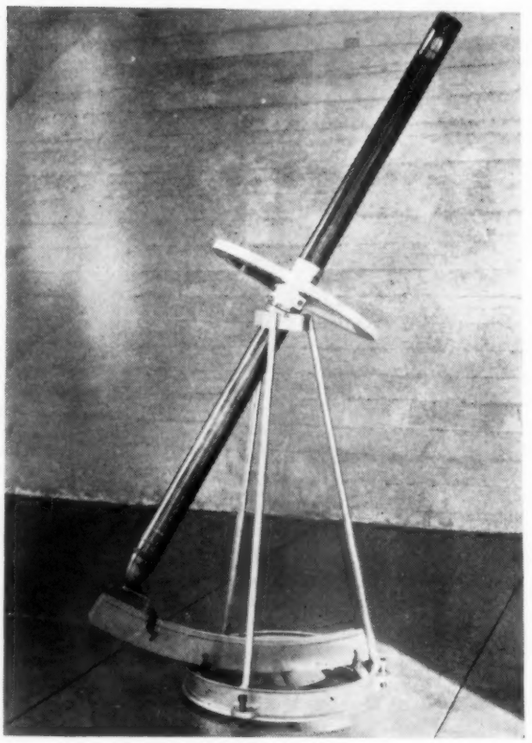
Six of Alexander Anderson's fleet of oil well survey work cars and six survey crews, taken at Anderson's headquarters in Fullerton

ber of cases have occurred where wells, which had both previously been surveyed, ran together; thus affording a complete and independent check on the accuracy of the maps both for inclination and direction.

Another severe test to which surveys are subjected occurs where an operator surveys every well on a large lease. Here, the differences between the wells as shown by the surveys are easily checked against the known underground conditions, and an error in any survey would usually be evident.

Almost daily checks run in many of the principal fields are obtained from cores. Where the survey shows the well to drift down structure, the core dips show a corresponding increase in inclination; where the well runs into the structure, the core dips will show a lessened inclination.

The above means of checking the accuracy of surveys are in the hands of the operator who knows the peculiarities of his own wells, the dips show by the cores, and many other facts which can easily be withheld from the oil well surveyor. It is therefore evident that poor work in oil well surveying would soon be discovered by the operator who naturally, is keenly interested in this subject because incorrect surveys would lead to poor water shut-offs, poor production, and many other operating difficulties, which would lose him a great deal of oil and money.



Anderson Oil Well Survey Machine mounted on a testing stand

Laboratory Tests

With the increasing depth and verticality of oil wells the need for maximum accuracy in surveying becomes more pronounced because the effect of comparatively small errors is proportionate to the depth of the well.

To afford customers an opportunity of testing for themselves the accuracy of the recording mechanism contained in his survey machine, Anderson long ago devised a complete testing equipment by means of which his machine may be set at any desired inclination and rotated to point in any desired direction.

The machine, mounted in this way, is placed in a private room at the disposal of the testing party who may test it in any way he pleases and makes his own private notes of the inclinations and directions in which it is set. The machine photographically records these inclinations and directions and after the testing party has finished, the film is developed and the results are worked out and mailed to them.

Instruments Available

The R. P. McLaughlin clinograph is an inclination recording device which employs two pens marking on the same clock-driven strip of paper. Part of the inclination record is made by one pen, and part by the other. The pens are supplied with different colored inks. The apparatus is housed in a blunt-nosed steel cylinder, eight feet long, and five inches in diameter and can be run inside casing not smaller then 6⅝ inches in diameter. It is run on drill pipe, and is oriented in the well by sight devices clamped to the pipe.

Several companies are supplying acid bottles mounted in go-devil form. These bottles are loaded on the derrick floor and are then dropped into the drill pipe and pump down to lodge in the drill collar or in special subs above the drill collar. By this means a reading for inclination may be taken in a drilling well with only a few minutes loss of time. The acid in these bottles is so proportioned that after the drill pipe has been held steady for a few minutes the corrosive power of the acid has been used up and the inclination record is not impaired while the drill pipe is being withdrawn from the well.

Celco Oil Well Survey, Inc., of Los Angeles, supplies an acid bottle mounted in a rubber cushioned housing on the top of a metal guide tube. The guide tube is a close fit for a special sub which is inserted in the string of drill pipe above the drill collar. The inside of the sub is grooved so that circulation can pass after the bottle has been pumped down into the recording position.

The Elliott apparatus employes a plumb-bob mounted in the lower end of a sliding piston. Below the plumb-bob there is a concave rubber record disc. The upper face of the rubber disc carries concentric degree circles. The sliding piston is supported by a coiled spring and the whole apparatus is filled with oil. The arrangement is contained in a spring sub placed above the drill collar. After the drill pipe has reached bottom of the well the pumps are started and the piston is forced downwards until the point of the plumb-bob penetrates the rubber record member. The piston remains locked in this position during drilling. When the apparatus is withdrawn from the well the inclination is easily read to about one-half degree from the mark made by the point of the pendulum. This ingenious contrivance is distributed by Oil Fields Service Company of Long Beach, and is also supplied in go-devil form.

Fuhrman Purchase Consummated

Tulsa.—The transaction by which Transcontinental Oil Company will take over properties of Fuhrman Petroleum Company has been closed finally, with the payment of $1,100,000 in cash. The remainder, $400,000, will be paid in oil. This deal gives Transcontinental Oil Company producing properties, royalty interests and leases on 37,000 acres of undrilled lands. The deal was announced February 8.

Tensleep Test Important

Rawlins, Wyoming.—The joint test drilled to the Tensleep by Producers & Refiners Corporation and Midwest Refining Company on Mahoney Dome has been shut at 4702 feet and is reported to have a hole full of oil of perhaps the highest gravity found in Wyoming. The well was shot and is now being cleaned out.

This discovery in the Tensleep sand in what is known generally as the Little Lost Soldier district is particularly important and means much to the future of the field. The structure is seven miles long and the new well is on the extreme west end of the anticline. Control of the acreage is held by the Producers & Refiners Corporation, Midwest Refining Company, Prairie Oil and Gas Company, Ohio Oil Company and Hughes Royalty Company. Producers & Refiners Corporation and Prairie Oil and Gas Company, it is understood, plan to drill three more deep wells in the field this summer.

Special for the Oil Industry . . .

PETRO PAINT

How du Pont formulated Petro Paint to meet the industry's special needs . . . a general purpose paint with many specific uses in the field and at the refinery . . . how this pre-tested finish protects wood, metal, concrete and plaster surfaces.

Burbank Field Gasoline Plant of Phillips Petroleum Company at Lep, Okla., with buildings protected from fumes by Petro Paint.

WHAT must be the qualities of an all-purpose paint for the oil industry?

It must be durable . . . it must retain its brilliance and whiteness. It must be designed to be used in systems for many types of surfaces... must be formulated so it can be applied in any weather in which a painter can work.

Knowing these facts, du Pont chemists set out to establish the formula for Petro Paint, a general purpose paint with many specific uses in all branches of the oil industry.

OTHER DU PONT PRODUCTS for the PETROLEUM INDUSTRY

Asphalt Chromate Emulsion, anti-corrosive for pipe lines; Aluminum Paint; Primers and special finishes; Tank Car Finishes; Antoxide and other metal, structural and storage paints.

Combination of Pigments Necessary

A simple white lead and raw linseed oil paint darkens on exposure to sulphur fumes, lowering its tank protection—so du Pont chemists considered the other economical white pigments. The most suitable were zinc oxide, lithopone and titanium oxide—but none of these mixed alone with linseed oil and drier makes a satisfactory paint.

Preparation of the ideal paint formula, therefore, depended on a correct proportioning and pre-testing of these pigments to balance the chalking of lithopone, the cracking hardness of zinc oxide, and the chalking tendency of titanium oxide. Each of these pigments had desirable qualities, and research proved that a proper balance of them would give a sturdy paint.

Du Pont chemists and other authorities have also proved beyond a doubt that a properly selected inert extender, incorporated in proper balance with prime pigments, did not contribute to early failure, but actually extended the life and durability of the film. Therefore, the pre-tested formula for Petro Paint includes a certain amount of inert extender that definitely improves the product.

Vehicle is Important

To carry so complex a mixture of pigments and make them spread easily and smoothly, the vehicle required careful development. Furthermore, lithopone paints formerly caused trouble due to poor drying in cold weather, but the formulation of the new balanced driers overcame this difficulty. Now Petro Paint is easier to handle than others.

Much time spent in pre-testing uncovered also some underlying relationships between the pigment and the vehicle, which have made Petro Paint more closely resemble white lead in oil for ease of brushing than do most mixed pigment paints.

Write for Technical Bulletin

But this page tells only part of the story of this paint. Write for Technical Bulletin No. 4, "Petro Paint for the Petroleum Industry," which tells also how to apply it for best results.

E. I. du Pont de Nemours & Co., Inc., Petroleum Sales Department, Independence Square, Philadelphia, Pa.; 2100 Elston Ave., Chicago, Ill.; 351 California St., San Francisco, Calif.

THESE Seven Points of PetroPaint show its superiority in the petroleum industry:

1. Petro Paint has unusual resistance to sulphur fumes and aqueous vapors.
   The three pigments in balance guarantee this.
2. It is adapted to systems designed for all types of surfaces.
   Works equally well on wood, metal, concrete or plaster.
3. When used on tanks, it curtails evaporation
   The balanced mixture of pigments gives it the remarkable ability to retain its original cleanliness for a long time without fading. This makes for high reflection, rather than absorption, of heat waves.
4. It has greater durability, under any condition.
   The hardness of the zinc oxide with the softness of lithopone makes for this quality.
5. It leaves a smooth surface for repainting.
   The lithopone and titanium OXIDE are responsible for this characteristic.
6. It can be applied under adverse weather conditions.
   This is controlled by the new balanced drier.
7. It covers better and spreads easier than other mixed paints and is therefore more economical.
   The perfect blending of the three pigments and the improved vehicle are responsible for this unusual quality.

One of the many tank cars painted with Petro Paint. Withstands exposure under all conditions, with evaporation kept at a minimum.

"Save the surface and you save all"—Paint's Journal

DU PONT

REG. U. S. PAT. OFF.

COMPLETIONS FOR PAST WEEK IN U.S. FIELDS

KANSAS

Company, Well and Location	Initial Production Bbls.	Depth
BUTLER COUNTY—		
Sullivan et al, Gilwick 1, ne c sw 6-27-4e	350	2927
Martin et al, Flanigan 1, sw se sw 29-27-3e	*	3203
CHASE COUNTY—		
Transcontinental, Wessell 1, ne c se 36-20-9e	*	2571
COWLEY COUNTY—		
J. A. Hull Co., Wallace 16, nw ne se 24-30-4e	100	3044
McNabb & Bess Drilling Co., Johnson 1 "A," se c ne sw 21-33-3e	50	3300
McNabb & Bess Drilling Co., Johnson 1 "B", se ne ne, 29-33-3e	125	3298
GREENWOOD COUNTY—		
Gore & Phillips Pet. Co., Blanck 3, ne sw se 29-22-13e	45	1745
Texas Co., Blanck 1, sw nw se, 29-22-13e	40	1695
HARVEY COUNTY—		
McPherson O&G Develop. & Shell, Haury 2, c se se 11-23-2w	*	3009
LEAVENWORTH COUNTY—		
Forrester et al, Yazel 1, cel se se 18-12-22e	*	1546
McPHERSON COUNTY—		
Shell Pet. Corp., Koehn 3, nw ne ne 16-21-3w	950	3392
Texas Co., Stucky 2 sw c 10-21-3w	950	3407
Stucky 1 (owdd) nw sw sw 10-21-3w	375	3406
Empire O&R Co., Voshell 4, nw se ne 9-21-3w	1450	3360
Darby Petroleum Co., McPherson College 1, nw se sw 13-20-2w	*	3763
PRATT COUNTY—		
O'Haver, Jones et al, Gereke 1, ne c sw 7-26-14w	*	4743
SEDGWICK COUNTY—		
Shell Pet. Corp. et al, Brown 1, se se sw 14-26-2e	330	3219
SUMNER COUNTY—		
Lario O&G et al, Wenrich 12, sw ne nw 23-32-2e	435	2090

OKLAHOMA

Company, Well and Location	Initial Production Bbls.	Depth
BRYAN COUNTY—		
W. G. Endicott et al, Craig 1, c nw ne 36-9s-9e	*	2160
CADDO COUNTY—		
Mid-Kansas O&G & Ramsey Pet. Co., Rowe 1 (owdd) sw c nw ne 36-6-10w	1630	3312
CARTER COUNTY—		
Magnolia, Gill 6, nw ne se 23-1s-3w	40	3742
CREEK COUNTY—		
Carter Oil Co., Miller 1, nw sw ne 12-17-10e	*	2876
Olean Pet. Co., Bigpond 5, ne c 36-15-7e	*	3297
HUGHES COUNTY—		
Independent O&G, Johnson 1 c ne ne 33-9-8e	*	4443
MARSHALL COUNTY—		
Goddard Oil Co., Marshall 2, ne c sw 20-5s-6e	30	663
Fleming and Kimbrell, Null 4, sw c ne nw 24-5s-5e	40	630
Bilbo Oil Trust Co., Null 4, sw c ne nw 24-5s-5e	100	587
Max Westheimer, Sullivan 2, sw se nw 30-5s-6e	*	753
Bilbo Oil Trust Co., Taliaferro 10 nw c sw ne se 14-5s-5e	*	794
MUSKOGEE COUNTY—		
Midwestern O&G, Mulkey 1, c nw nw 31-12-19e	¶3	561
J. M. Foltz, Spaulding 1, nw c ne se sw 9-15-18e	150	1053
J. L. Haner, Stedham 5 ne c se 8-15-18e	95	844
Bement O&G, Tobey 1a, ne c nw sw 15-13-16e	*	2306
W. J. Metzger, Harrison 2, c nw sw 13-14-18e	*	1121
E. A. Hollis et al, Rentie 1, sw c ne sw se 9-15-18e	*	1177

Tabulation and Comparsion on page 54

Company, Well and Location	Initial Production Bbls.	Depth
OKFUSKEE COUNTY—		
Transcontinental, Lasley 1, sw c nw 25-10-10e	¶40	3230
Mid-Continent Pet. Corp., Dindy 5, "B", c sw ne 31-11-11e	¶23	3097
Atlantic Oil Prod. Co., Fife 1, ne c nw, 7-10-12e	*	3097
OKLAHOMA COUNTY—		
Tom Slick, Bailey 1, nw c sw 1-11-3w	16,758	6482
Slick and Atkinson, Houghton 1, ne nw sw 1-11-3w	16,744	6453
I. T. I. O., Ferndale Community 1, ne se ne 11-11-3w	17,010	6520
Hall and Briscoe, Lindsay 1, ne se nw 14-11-3w	10,372	6461
I. T. I. O., Knox 1, ne c se 14-11-3w	3217	6422
WernerFarley 3, sw ne se 23-11-3w	4192	6570
Williamson-Canfield 2, sw se sw 24-11-3w	2000	6411
Coline Oil Co., Warren 3, nw sw sw 18-11-2w	13,828	6327
Sinclair O&G & Amerada, Kinter 9, sw nw se 30-11-2w	¶150	6365
I. T. I. O., Jones 5, se c nw, 31-11-2w	10,398	6625
Skelly Oil Co., Hoopes 5, nw ne ne 31-11-2w	4134	6380
Tom Slick, Hoopes 1, nw sw ne, 31-11-2w	4916	6622
Skelly Oil Co., Dunn 1, c e2 nw sw, 1-11-3w	2590	6440
OKMULGEE COUNTY—		
J. H. Rebold, Hawkins 1, sw nw ne 6-15-13e	30	2512
OSAGE COUNTY—		
Utilities Prod. Co., 21, sw c nw, 6-26-7e	¶5	1403
Peters Pet. Co. et al, 5, se ne nw 27-27-11e	30	1665
Winona Oil Co., 13, sw ne ne 20-29-9e	50	1586
Cities Service Gas Co., 92, c nw nw 15-26-9e	*	2525
PAWNEE COUNTY—		
Mannford Dev. Co., Fleming 2, se c 15-20-9e	*	2225
PAYNE COUNTY—		
Deep Rock Oil Corp., Echo Hawk 3, ne sw ne 4-18-5e	60	3535
Shaffer O&R, Sharrum 7, nw sw nw 5-17-4e	*	4290
POTTAWATOMIE COUNTY—		
James Guinn, Townlot 1, ne sw nw 8-9-5e	255	4385
Magnolia Pet. Co., Disch 1, ne se se 12-7-4e	57	4070
SEMINOLE COUNTY—		
Mid-Continent Pet. Corp., Caesar 1, nw ne sw 21-6-6e	170	2903
Magnolia Pet. Co., Johnson 1, ne sw nw 17-6-6e	9	2856
Empire O&R, Louisiana 1, nw ne se 16-6-6e	22	3717
Empire O&R et al, Rogers 2, se sw nw 9-6-6e	120	2960
Magnolia Pet. Co., Jackson 1, se sw ne 17-7-8e	¶100	2980
Magnolia Pet. Co., Coker 2, se sw se 13-7-6e	112	4120
Sinclair O&G, Thompson 3, "B", ne se sw 18-9-7e	375	4274
Carter Oil Co., Chowning 3, se nw sw 19-9-6e	2640	4153
Anderson, Gypsy et al, Molly 1, nw ne ne 30-5-6e	*	3062
Harris et al, Burgess 1, nw c sw, 21-6-6e	*	3088
Magnolia Pet. Co., Reed 1, ne se sw 8-7-7e	*	3415
Magnolia Pet. Co., Reed 1, sw c, 33-8-7e	*	3361
Carter Oil Co., Mecco 2, nw se nw 9-8-6e	*	4421
STEPHENS COUNTY—		
Pace et al, Bristowe 5, nw c sw nw 18-2s-7w	*	1433
Pace et al, Watkins 4, sw c nw se 21-2s-7w	250	1728
Magnolia, Crews 1, nw se ne, 12-1s-4w	50	3221
American Pipe Line Co., Nigh 11, ne c se nw 34-1s-8w	35	1975
TULSA COUNTY—		
Mays Brothers, Robinson 1, ne c sw sw 19-19-15e	*	1710

CALIFORNIA

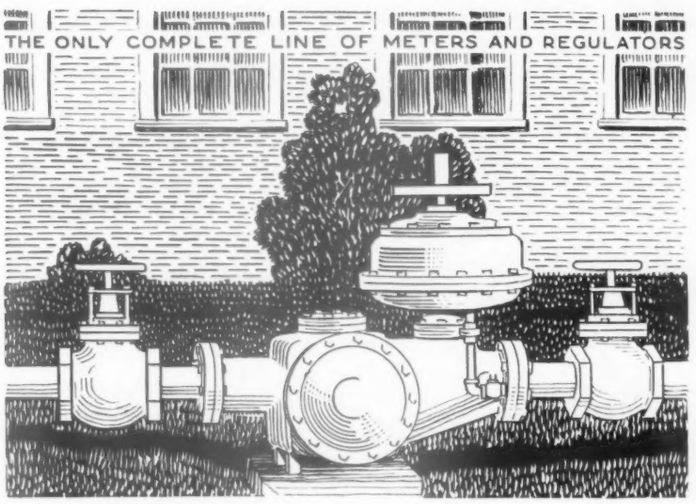
Company, Well and Location	Initial Production Bbls.	Depth
ELWOOD		
Barnsdall Oil Co., Doty 6	1800	3615
FRUITVALE—		
Mohawk Oil Co., No. 6	100	4185
Shell Oil Co., Moore 1	400	4072
HUNTINGTON BEACH—		
Richfield Oil Co., Dieter-Golay 2	100	3645
LONG BEACH—		
Chicksan Oil Co., Robertson 1	900	7065
Dabney-Johnston Oil Corp., No. 44.	100	7290
Italo Pet. Corp., Conklin 1	125	6955
Pan Cal Oil Co., No. 8	300	6700
Rawco, Inc., Noll 1	500	6660
The Texas Co., Fee 1	600	5985
NEWHALL—		
Yorke and Lockhart, Clampitt 2	200	1370
POTRERO—		
Hugh Grant, No. 4	1000	5255
SANTA FE SPRINGS—		
Associated Oil Co., Jordan 3	750	7900
H. A. Bardeen, No. 1	100	7203
General Pet. Corp., Hill-Midway 105	160	7950
Santa Fe 230	200	7145
Richfield Oil Co., Clarke 3	20	7895
Standard Oil Co., S. G. 13	175	7900
The Texas Co., Foix 4	100	8100
Twin Bell Synd., No. 3-2	50	8070
Union Oil Co., Alexander 24	2400	5125
Wilshire Annex Oil Co., Eagle 2	25	6885
VENTURA—		
Associated Oil Co., V. L. W. 11	3700	7370

EASTERN STATES

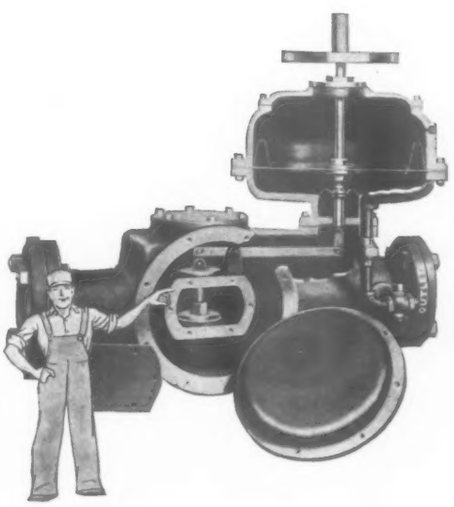
WEST VIRGINIA

Company, Well and Location	Initial Production Bbls.	Depth
RITCHIE COUNTY—		
Astron Oil Co., Strausburg Realty 4	¶1/4-2	....
W. H. Bickel, Jones 1	¶1/4	....
Choauill & Hay, McCullough 7	*	....
CLAY COUNTY—		
South Penn Oil Co., Parker 8	10	....
Virginian Gasoline & Oil Co., Brown-Swan 22	25	....
PLEASANTS COUNTY—		
Martin Kelley, Cornell 1	1	....
Cornell 2	10	....
ROANE COUNTY—		
E. A. Lester & Co., O'Hara Estate 1	*	....
G. L. Cabot, Inc., Smith 4	4	....
DODDRIDGE COUNTY—		
J. D. Foley, Dotson 1	5	....
WETZEL COUNTY—		
Troy Oil & Gas Co., Troy 1	3	....
WIRT COUNTY—		
Roberts Bros. Rathbone 56	3	....
HARRISON COUNTY—		
Reserve Gas Co., Burnsides 2	¶1/4	....
MARSHALL COUNTY—		
Manufacturers Light & Heat Co., Howard Hrs. 1	¶1/4	....

(Continued on page 88)



FOR LOW PRESSURE REGULATION -EMCOS



"Supersensitive"—the tribute payed by gas engineers to the EMCO low pressure regulator. Long sensitive diaphragm stroke, relatively short valve stroke, permits large diaphragm area responsible for high degree of accuracy. Diaphragm type seal used in diaphragm stem—eliminates friction, pumping and chattering.

Of course the Removable valve box; One piece body casting; Interchangeability of parts; are found in EMCO low pressure regulators.

EMCO PRINCIPLES

Removable Valve Box · One Piece Body Casting
Interchangeable Diaphragm Heads
Long Sensitive Diaphragm Stroke
Relatively Short Valve Stroke

EMCO METERS AND REGULATORS

PITTSBURGH EQUITABLE METER COMPANY

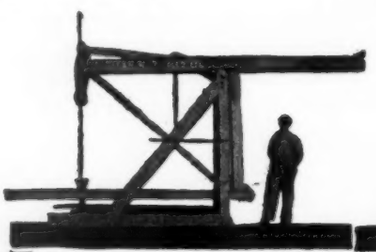
Main Office and Works—Pittsburgh, Pa.

New York City · Chicago, Ill. · Tulsa, Okla. · Dallas, Texas · Columbia, S. C. · Salt Lake City · Seattle, Wash. · Houston, Texas · Los Angeles, Calif. · Kansas City, Mo.

HOW MUCH POWER DO YOU LOSE AT THE CORNERS?

Where the flow of power from a band-wheel or geared pumping power enters any well it must make a right-angle turn. This right-angle turn is often a source of constant trouble and expense. It inevitably constitutes a certain loss of power. The best solution is a Jensen Straight Lift Jack that exactly fits the well. Jensen Jacks eliminate the trouble and expense and reduce the loss of power to an absolute minimum. They are tried and proven around the world. For a catalog, address Jensen Brothers Manufacturing Co., Coffeyville, Kansas, U. S. A.

Our export office is at 136 Liberty Street, New York City. Stocked by The Thrift Corp., Houston, Tex.



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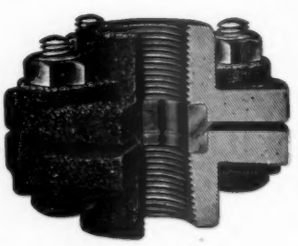

Company, Well and Location	Initial Production Bbls.	Depth
MARION COUNTY—		
Owens-Illinois Glass Co., Fox 2	¶1	....
MONONGALIA COUNTY—		
Convex Oil Co., Vorhees 1	*	....
PENNSYLVANIA		
GREENE COUNTY—		
Greensboro Gas Co., Smith 1	*	....
Vance 1	4	....
South Penn Oil Co., Lemly 1	4	....
ILLINOIS		
ST. CLAIR COUNTY—		
Sugar Loaf Oil Co., Breuer 5	70	512
WABASH COUNTY—		
Robinson & Co., Robinson 1	10	1476
Schaffer 1	25	1500
CRAWFORD COUNTY—		
O. R. Oil & Gas Co., Williams 1	*	1002
Mark U. Weber, Calvert 1	*	....
McColpin, Mattox & Co., Conrad 1	2	....
W. C. Kennedy Co., Murphy 9	3	....
NEW YORK		
DUNDEE FIELD—		
Belmont Quadrangle Drilling Co., Fee 1	¶12	....
MICHIGAN		
KENT COUNTY—		
Lang & Shriver, Schondelmeyer 1	*	....
CASS COUNTY—		
Berrien Petroleum Syndicate, Franz 1	*	....
Blair, Miller & Co., Stuttman 2	15	704
SOUTHEASTERN OHIO		
NOBLE COUNTY—		
Urban, Nau & Co., Hupp 2	2	....
B. E. King & Co., Crum 6	20	....
T. A. Clark & Co., Bryan 1	*	....
MONROE COUNTY—		
Wittmer Oil & Gas Co., Burkholder 1	*	....
Kinsey Farm Oil Co., Kinsey 2	¶¼	1255
WASHINGTON COUNTY—		
Yonley Oil & Gas Co., Yonley 3	¶¼-1	1698
MORGAN COUNTY—		
Ohio Fuel Gas Co., Zumbro 1	¶¼	900
CENTRAL OHIO		
MUSKINGUM COUNTY—		
Hope Construction & Refg. Co., Wilking 1	¶4	3267
Wittmer Properties Trus., Dailsy 1	*	4152
Fritz Oil & Gas Co., Swingle 1	¶3½	4100
Wittmer Properties, Trus., Trehey & Co. 1	*	4150
Andrews & Co., State of Ohio land 1	90	....
Wm. Kline & Co., Ramsbottom 5	160	....
PERRY COUNTY—		
The Preston Oil Co., Moore 2	90	3559
John Elder & Co., Downhour 3	*	943
Edwards & Co., Guy 1	5	....
Ralph Bros., Inc., Lafollette 1	¶1¼	....
CUYAHOGA COUNTY—		
North Olmstead Bank, Merkle 1	5	....
Merkle 3	8	....
Merkle 2	5	....
ATHENS COUNTY—		
Ohio Fuel Gas Co., Wyatt 2	¶¼	1457
Beasley 3	*	1423
Townsend Oil & Gas Co., Castle 11	¶¼	....
VINTON COUNTY—		
Co-operative Oil Co., Throckmorton 1	*	....
ASHLAND COUNTY—		
Ohio Fuel Gas Co., Smith 1	*	....
Robinson & Co., Smith 5	¶¼-3	658
The Kemrow Co., Latter 1	¶½	2757
GUERNSEY COUNTY—		
Ohio Fuel Gas Co., Umstott 2	*	3674
East Ohio Gas Co., Gray 8	40	3539
SUMMITT COUNTY—		
Brendall & Co., Fairchilds 1	¶2	4081
TUSCARAWAS COUNTY—		
Traders Oil & Gas Co., Caldwell-Quillan 1	¶1½	3544
FAIRFIELD COUNTY—		
City Natural Gas Works Co., Hartman 3	*	2470

(Continued on page 90)

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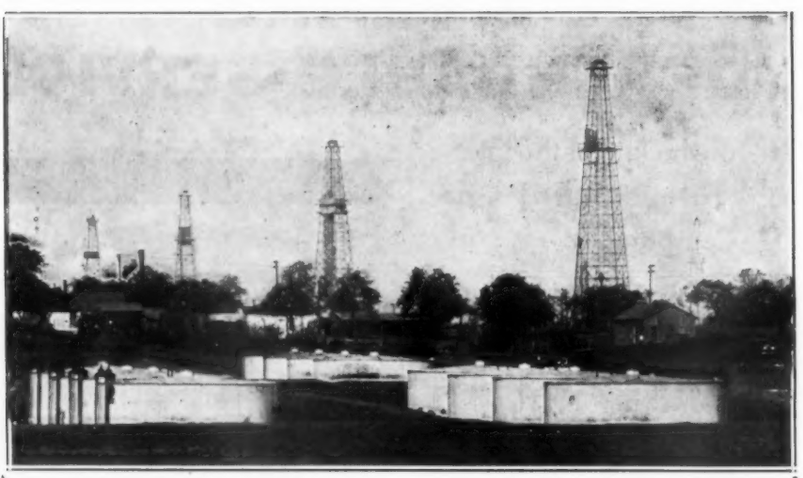

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MALONEY

NORTHWESTERN OHIO

Company, Well and Location	Initial Production Bbls.	Depth
HARDIN COUNTY—		
Roundhead Oil & Gas Co., Hites 8	1	....
ALLEN COUNTY—		
C. A. Peavey & Co., Hoover 3	15	1352
SENECA COUNTY—		
Irvin Waltermier, Waltmier 8	1	....

KENTUCKY

WAYNE COUNTY—		
Frank, Harman & Co., Bartram 1..	1	....
Abe Denney & Co., Guffey 1	1	....
JOHNSON-MAGOFFIN COUNTIES—		
Magoffin Oil Corp., Williams Hrs. 4	1	....
LAWRENCE-JOHNSON COUNTIES—		
Noble Oil Co., Davis 1	4	....
Davis 2	4	....
Davis 3	4	....
Colvin 1	2	....
Colvin 2	2	....
WOLFE COUNTY—		
Amy Burnett, J. P. Bush No. 2, tr. 2	1	....
Townsend Hrs., Girard 1	*	....
McCREARY COUNTY—		
Baine & Hogue, Phipps 1	6	....
Pigeon Creek Oil Co., Stearns Coal 14	8	....
McLEAN COUNTY—		
The Ohio Oil Co., McManama 5...	30	....
McManama 6	25	....
McManama 7	30	....
Cameron & Co., Sohmers 1	25	....
DAVIESS COUNTY—		
Watts, Vickers & Co., Schultz 1 ...	25	....
White & Co., Howard 1	*	....
Miller & Damron, Howard 4	10	....
HENDERSON COUNTY—		
J. B. Lyddane, Gish 4	30	....
Thomas Wittmer, Gish 4	35	....
Wittmer Oil & Gas Co., Cosby 4...	8	....
Welfare Oil Co., Hatchett 2	8	....
Niagara Oil & Gas Co., Duncan 2..	8	....
OHIO COUNTY—		
C. M. Root, Wigginton 9	50	....
Wigginton 10	80	....
Wigginton 11	10	....
Wigginton 12	*	....
Steel 7	15	....
Cumberland Petroleum Co., Lloyd 4	30	....
Lloyd 5	30	....
Lloyd 6	35	....
Lloyd 7	40	....
Hupp, Duff & Co., Stewart 8	40	....
Stewart 9	40	....
Stewart 11	10	....
Cumberland Petroleum Co., Brooks 1	150	333
F. L. Weir & Co., Norris Hrs. 13..	50	....
Union Oil Co., Evans 2	8	....
White, Vickers & Co., Helton 1 ...	*	....
Rex-Pyramid Oil Co., Rhodes 5....	*	....
Morgan 13	*	....

NORTH LOUISIANA

OUACHITA PARISH (Monroe)—		
Ark. La. Pipe Line Co., Rea & Green 4, 82-18-4e . .....¶8/10		2210
Louisiana G&F Co., Breard 2, 45-18-4e 9/10		2182
Hope Prod. Co., Fairbanks 3, 36-20-4e	†	2302
RICHLAND PARISH—		
Palmer Corp., Rhymes-England Pltg. Co. 9, 4-16-6e	¶3	2450
Southern Carbon Co., Landers 1, 10-16-6e	¶39	2445
UNION PARISH (Monroe)—		
Industrial Gas Co., Jenny B-1, 33-21-4e	¶5	2115
Sabine Prod. Co., Morgan 1, 11-20-3e	¶3	2190

ARKANSAS

Company, Well and Location	Initial Production Bbls.	Depth
OUACHITA COUNTY (Smackover)—		
Marine Oil Co., Snyder 6, 34-15-15	¶115	2287
Snyder 9, 34-15-15	20	1950
UNION COUNTY (Smackover)—		
Texas Company, Alphin 9, 3-16-15	100	2370
UNION COUNTY (Champagnolle)—		
Magnolia Pet. Co., Alice Gregory 1, 15-17-14	*	3600

SOUTH LOUISIANA

EDGERLY—		
Hercules Oil Co., Paraffine 3, dd	*	3260
FOUR ISLE BAYOU—		
The Texas Co., Four Isle 3, 23-21s-16e, Terrebonne Parish	*	3772
VINTON—		
Wilson Broach, Parks 12, dd	12	2600
Seiss Oil Synd., Green 7, dd	30	2500

TEXAS GULF COAST

BARBERS HILL—		
F. L. Thompson, Wilburn 3	1000	5103
Sinclair, Wilburn 6	1000	5249
BATSON—		
Ada Belle Oil Co., Carlton 135	12	800
HULL—		
The Texas Co., Barrow Fee 1	1000	3960
Republic Prod. Co., Dolbear 124, dd	1000	2430
HUMBLE—		
The Texas Co., Koehler 14, wo	10	3575
Sun Oil Co., Bender 4	*	5516
Continental Oil Co., Kattar 1	*	5147
T. P. Lee, Wheeler & Pickens 1	70	4183
PIERCE JUNCTION—		
Continental Oil Co., Prudential Inv. Co. 2, dd	*	4320
Saxet Oil Co., Hermann Hospital Est. 6	350	4780
Hermann Hospital Est. 5	*	4161
PETTUS—		
Houston Oil Co., Portis 1	*	4976
REFUGIO—		
Fox & Heflin, Fannie Heard 2	600	3703
Rutherford-Traylor Oil Co., Cable 1	700	3698
Houston Oil Co., Vance 2	600	3692
Fannie Heard 9	¶40	3665
Saxet Oil Co., Ryals 2	1000	5467
Sun Oil Co., Buckley 3	*	3681

SOUTHWEST TEXAS

ATASCOSA COUNTY—		
Frontier Oil Co., W. H. Gray 1	*	2078
BASTROP COUNTY—		
Abernathy et al, Vic. Aldredge 1	*	2397
Superior Oil Co., J. M. Moore 1	*	3327
BEXAR COUNTY—		
Dingman Drlg. Co., Caffey 1	*	400
Jarmon & Burton, Shook 2	*	2189
CALDWELL COUNTY—		
Morgan et al, O. O. Perry 1, 3½ mi ne Salt Flat	*	2766
Trinity Drillers, G. McMillan 1	*	3441
FRIO COUNTY—		
Walker & North, Tribble 1	*	3555
GONZALES COUNTY—		
Fitzsimmons Drlg. Co., Huber 1	*	3350
United N. & S. Dev. Co., Mrs. J. A. Kerr 2		5041
GUADALUPE COUNTY—		
Trigg et al, Fred Warren 1	*	2950
W. D. McBee et al, Blumberg 1	*	1005
LA SALLE COUNTY—		
J. G. Nix et al, Coleman 1	*	500
Salt Lake Pet. Co., Bochwith 1	*	2875
MAVERICK COUNTY—		
Rycade Oil Corp., Chittim 4	*	6130
MEDINA COUNTY—		
California-Medina, Roth Est 1	*	3780
Pearson Oil Co., Medina Valley Irrig. Co. 4	*	765
Medina Valley Irrig. Co. 5	*	922
C. Switzer et al, Martin Zerr 1	*	3000
WILSON COUNTY—		
Grayburg Oil Co., F. E. Tegler 1	*	3420
Owens & Sutton, Stockdale 1	*	200
ZAPATA COUNTY—		
O. W. Killam, Cuellar 17	100	1481
DARST CREEK—		
The Texas Co., D. Wilson 8	1150	2602

TEXAS PANHANDLE

Company, Well and Location	Initial Production Bbls.	Depth
CARSON COUNTY—		
Cities Service Gas Co., S. B. Burnett 23	¶42	2582
GRAY COUNTY—		
Adams Oil Co., J. S. Morse 4	200	2600
Bob Dunlop & Dawson, Morse 4-C	300	2695
Empire Gas & Fuel Co., J. E. Meers 1-B	¶14	2885
Gulf Prod. Co., P. A. Worley 6	3205	2868
Magnolia Pet. Co., S. Faulkner 5	¶21-3000	2872
McMan O&G Co., Palmer 8	220	2950
Phillips Pet. Co., Coombs-Worley-Fox 2	1600	2845
Prairie O&G Co., Worley-Laycomb 1	¶1-900	2823
Shamrock O&G Co., W. S. Clayton 4-C	675	2825
HUTCHINSON COUNTY—		
Phillips Pet. Co., R. F. Cheatham 2	1050	3065
Johnson-Katz 2	800	3013
Johnson-Margaret 2	625	3009
Johnson-Royal 1	500	3018
WHEELER COUNTY—		
Murchison-Fain & McGaha, I. Close 12	*	1418
Prince & Adams, L. C. Burcham 2	¶23	1920

NORTH TEXAS

ARCHER COUNTY—		
Barnsdall Oil Co., Wilson 14-A	*	1850
C. P. Burton et al, Wilson 1-A	*	1553
Bridwell Oil Co. & Gulf, Fails 1	165	1373
Lester Burns et al, Fails 7	50	1388
Fails 8	100	1367
J. H. Massie et al, Richardson 10	70	1391
Moran Drlg. Co. & Independent O&G Co., Scott 4	*	1174
Pandem Oil Corp., Hudson 1-D	*	1483
Perkins & Cullum, Falls County 1	20	1151
Maben-Campbell 1	*	1371
Vigil Oil & Gas Co., Harmer 5	55	1439
BAYLOR COUNTY—		
Barnsdall Oil Co. & Grisham, Portwood-Harry 3	65	1405
CLAY COUNTY—		
Ray Dawson et al, Robinson 1	*	2052
GRAYSON COUNTY—		
F-H-E Oil Co., Finke 2	*	900
MONTAGUE COUNTY—		
Arco Oil Co., Salmon 3-E	55	1693
Bridwell Oil Co., Dennis 4	80	1718
Bridwell & Continental Oil Co., McGaughey 8	160	1302
Lloyd Oil Corp., Wheelock 6	*	1365
WICHITA COUNTY—		
Arkansas Fuel Oil Co., K&K 30-A	75	1770
R. R. Clark et al, Bickley 3	*	1210
Continental Oil Co., Waggoner Bros. 6-C	160	1869
Humble O&R Co., Taylor 24	110	1758
Tom Hunter et al, Waggoner Bros. 1-I	*	1480
C. P. Sheldon et al, Moeller 1	*	901
Truman Oil Co., Waggoner 18	70	1597
WILBARGER COUNTY—		
Anderson et al, George 1	*	2804
Dixie Oil Co., Waggoner 1-H	*	2401
Waggoner 1-N	*	1939
Fain-McGaha Oil Corp., Waggoner 19-L	90	2325
Waggoner 25-W	45	2306
The Texas Co., Waggoner 25-E	50	2388
YOUNG COUNTY—		
Brihill Oil Co., Robinson 2	25	739
C. W. Clark et al, Weinberg 1	325	1071
Dr. W. M. Cooke et al, Edwards 1	*	150
Cunningham et al, Kisinger 4	115	2509
Geo. Cooper et al, Junker Benson 1	120	1080
Junker-Benson 2	75	1077
Halmack Oil Co., Carpenter 5	20	901
W. H. Hammon et al, Keith 1	*	805
J. M. Hickey et al, Gibbs 1	*	927
Hinson & Tidwell, Grantham 3	*	4812
Tom Hunter Oil Corp., Benson 3-A	100	1081
Benson 2-B	140	1075
Bloodworth 1-A	110	1074
Independent O&G Co., Lowe 2	20	646
Lindsey Drlg. Co., Heatherly 1	*	1020
E. B. Madden et al, Fee 1	30	1077
Nimrod Oil Co., Hall 3	*	893
Tucker 1	*	1108
Panhandle Ref. Co. et al, Lowe 2	*	727
Perkins-Cullum et al, Dunagan 8	150	1078
Lemmond 8	95	729
Perkins-Cullum-Anderson, Cox 1	200	1067
E. Remington et al, Remington 3	15	696
E. R. Riggs et al, Larimore 3	15	700

CENTRAL WEST TEXAS

Company, Well and Location	Initial Production Bbls.	Depth
BROWN COUNTY—		
Humble O&R Co., Kilgore 2-A	400	1193
Tex-Cal Oil Co., McIntyre 2	30	996
Ungren-Frazier et al, Harrell 1	*	400
CALLAHAN COUNTY—		
Mid-Tex O&G Co. et al, Windham 1	*	1656
COLEMAN COUNTY—		
Conner et al, Kirkpatrick 1	*	1452
A. R. Epenauer Drlg. Co., Brooks 1	*	3045
EASTLAND COUNTY—		
Amyx et al, Connellee 1	*	1500
J. L. Elliott et al, Liberty 1	*	1754
Hopkins et al, Ray 1	†	2040
T P Coal & Oil Co., C. L. Durocher 5	30	2976
PALO PINTO COUNTY—		
Jerome McLester et al, Wilber 1	*	1780
T P Coal & Oil Co., Stewart 166	10	1670
Wickens et al, Wilber 1	60	3043
SHACKELFORD COUNTY—		
Craig Morton et al, Davis 1 (Sec. 41)	*	1793
Walter Ritterbusch et al, Nail 1	*	1340
STEPHENS COUNTY—		
Chestnut & Smith Corp., Chesley 1	*	3897

WEST TEXAS

ECTOR COUNTY—		
Cosden Oil Co., University 2-A	960	3700
Gulf Prod. Co., Kloh 1-G	230	3760
Humble-Penn-Atlantic, Kloh 5-D	390	3726
R. L. York 4	730	3710
Shell Pet. Corp., Jones 1	1000	3760
HOWARD COUNTY—		
Ward Oil Co., Roberts 23	240	2600
LOVING COUNTY—		
Lockhart & Co., Hubbard 5	70	4219
PECOS COUNTY—		
Dixie Oil Co., J. H. Tippett 1	200	425
Southern Crude Oil Pur. Co., Eaton 1	25	1736
WARD COUNTY—		
Shell ePt. Corp., Sloan-Owen 1	75	4414
WINKLER COUNTY—		
Humble O&R Co., Walton 3-B	190	3005

CENTRAL EAST TEXAS

VAN ZANDT COUNTY—		
Cranfill-Reynolds Co. (now unit plan) A. D. Clark 1	3000	2875
Pure Oil Co., J. J. Murphree 1	5000	2953

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Powell, Wyoming. — One of the most colorful characters among the many who have had a part in the development of the oil industry in the Rocky Mountain States is Nettie M. Thompson, of Elk Basin, who has for years struggled and fought to drill a well on her holdings southeast of the Elk Basin field 13 miles northwest of this town which is in northern Wyoming. Now Mrs. Thompson has an oil well, or at least the first substantial showings for one, and the community and the state oil industry at large are glad and relieved. Everyone hopes she makes a million out of it.

It took several years of hard work and arguing to convince citizens of Powell to back the company Mrs. Thompson formed for the purpose of drilling the well. Then in July, 1927, the test was spudded in and has been drilling intermittently. It is standing in the top of the first Wall Creek sand at 2412 feet with a considerable amount of oil in the hole. It will be necessary to run a string of casing to shut off upper cavings before the well can be drilled in. Until this happens, an accurate estimate of the production can not be made. Location is on Section 6-57-99 on government land.

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CALIFORNIA

ELWOOD—Barnsdall Oil Co.'s Luton-Bell 15, 15-4-29.

KERN COUNTY—Shell Oil Co., Williams 1, 17-27-23.

KERN RIVER—Bishop Corp., McDonald 1, 26-28-27.

LONG BEACH—Dabney-Johnston Oil Corp., No. 43, 19-4-12. Mendin Oil Co., Ltd., 13-4-13. Carter Pet. Co., Ltd., No. 1, 13-4-13.

POTRERO—Hugh Grant, Grant-Inglewood 5, 28-2-14. McAdams Oil Synd., McAdams 1, 28-2-14.

RICHFIELD—Louis C. Simmel, No. 1, 21-3-9.

RINCON—Seacliff Development Co., Ltd., No. 56-1-A, 7-3-24.

PIRU—A. H. McFarland & Co., No. 3, 33-4-18.

SANTA FE SPRINGS—Mohawk Pet. Co., Hathaway 6, 6-3-11.

TEXAS

Lease or Owner, Acreage, Well, Survey, Distance to lease lines or well.

ARCHER COUNTY—Gilliland Rosser Oil Co., Wichita Falls, G. Symank, 80, 3, W. E. Probert sur, 150 ft from s and w lines. Pandem Oil Corp., Wichita Falls, L. L. Hudson, D, 50, 1, B 83, J. W. Harris sur, 150 ft from s and w lines. Riner & Omohundro, Wichita Falls, W. R. Farmer, 40, 1, BCSL sur, 940 ft from w and 150 ft from s line of Blk 57. Pandem Oil Corp., Wichita Falls, J. A. Young, 40, 11, 2426 TE&L sur, 150 ft from s and w lines of ne of se. L. T. Burns, Wichita Falls, R. W. Fails, 42, 5, 2419 TE&L sur, 300 ft n of No. 4; 6, 300 ft w of No. 6. D. O. Johnson, Wichita Falls, H. B. Hamilton, 40, 1, B 6, BBB&C sur.

ANDERSON COUNTY—Sun Oil Co., Dallas, Bowers-Maier, 905, 2, E. G. Meyers sur, 1680 ft from se and 1000 ft from sw line. A. Gardner, 147, 1, M. Salisar sur, 1150 ft from n and 150 ft from e line. Humble, Houston, J. C. Beard, 178, 3, Jno. Trimmer sur, 1000 ft from n and 150 ft from e line.

AUSTIN COUNTY—Humble, Houston, R. G. Paine, 9, W. C. White sur, west central part of lease; L. R. Sherrod, 2, W. C. White sur, 400 ft e of center of w line.

BROWN COUNTY — Phillips, Bartlesville, Okla., S. Y. Newsom, 100, 12, S 4, SA&MG sur, 980 ft from n and 890 ft from w line. D. C. Sndiler, Hastings, Neb., B. Smith, 138, 1, J. Aldrick sur, 200 ft w of center of e line. Anzac Oil Corp. et al, Coleman, A. F. Armstrong, 80, 1, S 1, H&GN sur, 3760 ft from e and 660 ft from n li sur. H. H. Simons, Brownwood, S. C. Kessler, 54, 1, S 42, H&TB sur, 150 ft from s and e lines. J. B. Holder, Brownwood, A. A. Moore, 34, 1, R. F. De Bord sur, 750 ft from e and 150 ft from n line. Greene Prod. Co., Fort Worth, A. A. Moore, 52, 9, S 4, SA&MG sur, 450 ft e of No. 5. Tex-Cal. Oil Co., Brownwood, W. A. McEntire, 21, 2, S 11, HT&B sur, 150 ft from s and e lines. E. L. Smith Oil Co., Inc., Mexia, J. C. Suttles, 100, 1, No. 646 J. Padilla sur, 1078 ft from n and 720 ft from w line; L. A. George, 100, 22, S 42, HT&B sur, 300 ft n of No. 1. Bush & Roberts, Brownwood, J. L. Richardson, 50, 8, SA&MG sur, 350 ft from n and 400 ft from w line. W. E. Duffy et al, Ft. Worth, L. A. George, 17, 4, S 42, Chadwick sur, 300 ft e of No. 2.

BEE COUNTY — Cosden Oil Co., Fort Worth, R. A. McKinney, 350, 1, Jno. Pace sur, 330 ft from s and w lines. Humble, Houston, M. M. McKinney, 3, L. O. Randolph sur, 1743 ft from nw and 150 ft from sw li.

BASTROP COUNTY — Pacific Oil & Gas Co., Austin, Geo. Moore, 160, 1, L. Leverance sur, 300 ft from s and w lines.

BEXAR COUNTY—I. L. Dingman, San Antonio, C. N. Cassin, 1000, 7, No. 4283 J. M. Urriegas sur, 625 ft from w and 900 ft from s line.

BRAZORIA COUNTY—L. A. Layne, Houston, Wisdom, 840, 6, A. Darst sur, 2250 ft from sw and 1150 ft from se line.

BURLESON COUNTY—Cayhill & Reese, Rte. 2, Somerville, J. E. Baker, 250, 1, center. Rochmille & McRobie, 3204 Rogers, Ft. Worth, J. D. Dryac, 107, 1, F. Neibling sur, 150 ft from n and 1500 ft from e line.

Tabulation and Comparison on Page 54

CALLAHAN COUNTY—Metzger Oil Co., Cisco, W. H. Jobe, 60, 9, S 11, Bayland Asy. sur, 300 ft n of No. 1. F. M. Taylor et al, Colorado, G. Biggerstaff, 80, 1, S 322, B 5, SP Ry sur, 720 ft from n and 1100 ft from w li sec. Hobbs & Ferguson, Abilene, J. E. Jones, 80, 4, S 40, D&D Asy. sur, west central part of lease. M. E. Wakefield et al, Cross Plains, McDonald, 229, 1, J. M. Swisher sur, 150 ft from w and 450 ft from s line. E. Lilius, Abilene, J. Robinson, 40, 1, S 47, D&D Asy. sur, 450 ft from w and 840 ft from s li se ne. Arcadia Ref. Co., Brownwood, A. S. Kobbans, 160, 38, 2995 TE&L sur, 150 ft from n and 320 ft from e line. McCown & Richardson, Pioneer, G. T. Baum, 40, 1, B 202, VCSL sur, 300 ft from n and 150 ft from e line.

COLEMAN COUNTY — L. J. Kelly, New York, N. Y., J. W. Long, 100, 1, S 58, B 4, J. M. Austin sur, 1200 ft from e and 2000 ft from s li sur. C. S. Willmott, Coleman, W. H. Kingsberry, 150, 1, S 494, WCSL sur, se corner. Lloyd Oil Corp., Fort Worth, G. B. Bartholomew, 320, 10, 279 Wm. Farris sur, 416 ft e of No. 6. Tower & McKanna, Inc., Wichita Falls, F. A. Lane, 35, 1, B 4, McCarty sur, 150 ft from s and e lines. Harriss, Hann & Fleeger, Coleman, Woodward, 160, 1, S 274, B 88, C. T. Pendleton sur, 730 ft from n and 200 ft from w li. Atlantic Oil Prod. Co., Dallas, M. T. Overall, 40, B 4, S 9, B 1, GH&H sur, 200 ft from s and w lines. Coleman Gas & Oil Co., Coleman, W. C. Holt, 102, 1, M. A. Fisk sur, 2439 ft from e and 1786 ft from s line.

COOKE COUNTY—Lesh & McCall, Nocona, H. Y. Gibson, 35, 1, Clubb sur, 150 ft from n and w lines. Sun, Dallas, J. W. Milburn, 80, 3, J. DeGuirre sur, 300 ft e of No. 2, Danciger Oil & Ref. Co., Fort Worth, F. J. Truebenbach, 150, 1, J. Clark sur, 150 ft from s and w lines. Staniforth & Danciger Oil & Ref. Co., Fort Worth, W .R. Cannon, B, 40, 1, T. J. Hutchinson sur, 150 ft from n and e lines of survey.

CARSON COUNTY—Danciger Oil & Ref. Co., Fort Worth, B. F. A. Byrum, 160, 2, S 188, B 3, I&GN sur, 330 ft from w and 990 ft from s li sw. Gibson Oil Corp., Amarillo, E. J. Moore, 120, 1, S 20, B 7, I&GN sur, 330 ft from s and e lines of ne se.

CALDWELL COUNTY—Gulf, Houston, T. Briscoe, 100, 2, P. B. McCarley sur, 150 ft from s and e lines.

CRANE COUNTY — Gulf Prod. Co., Fort Worth, J. T. McElroy, 619, 76, S 200, B F, CCSD&RGNG sur, 2762 ft from n and 2310 ft from e line.

ECTOR COUNTY — Cosden Oil Co., Fort Worth, University B, 80, B 4, S 2, Blk 35, 330 ft from n and 1320 ft from e li s¼ ne. Sunray Oil Co., Tulsa, Okla., Jones, 143, 1, S 6, B 44, Twp. 3s, 440 ft from e and 330 ft from s li ne.

FAYETTE COUNTY—T. B. Hoffer-Stanton, Fort Worth, M. E. Manton, 102, 1, W. H. Taylor sur, 700 ft from nw and 275 ft from ne line.

GUADALUPE COUNTY — Gulf, Houston, Dix-McKean A, 3, J. R. Robinson sur, 150 ft from s and e lines. Louisiana Oil Ref. Co., Shreveport, La., Dix-McKean, 74, 3, J. W. Robinson sur, 875 ft from nw and 150 ft from sw line; 4, 300 ft se of No. 3. T. Dix, 50, 5, J. W. Robinson sur, 300 ft se of No. 3. J. S. Abercrombie Co., & Harrison Oil Co., Houston, T. Dix, 20, 8, J. R. Robinson sur, 150 ft from n and e lines. Magnolia, Dallas, M. T. Klein, 100, 2, J. W. Robinson sur, 450 ft from n and w lines. Transcontinental, Tulsa, Okla., W. M. Dollie, 78, 1, E. Gotari sur, 150 ft from s and 1422 ft from e line. Humble, Houston, L. G. Denman, A, 300, 14, A. S. Emmett sur, 4388 ft from se and 150 ft from ne lines.

GLASSCOCK COUNTY—F. H. E. Oil Co., Sherman, D. Roberts, 80, C3, S 156, B 29, W&NW sur, 306 ft s of No. 1, n¼ sw.

GRAY COUNTY — Clayton-Key Oil Co., Amarillo, E. Key, 40, 2 B&B sur, 330 ft from n and e lines. Texas Co., Wichita Falls, J. E. Williams, 7, S 7, B 1, ACH&B sur, 1120 ft from s and 330 ft from w li ne. Danciger Oil & Ref. Co., Fort Worth, T. Catlin, 71, 1, S 57, B 3, I&GN sur, 330 ft from e and 175 ft from s line.

HARRIS COUNTY—Lee & Wilson, Houston, Wheeler-Pickens, 2, 1, B 10, Wheeler-Pickens sur, 50 ft from n and e lines.

HUTCHINSON COUNTY—Rock Creek Oil Corp., Box 1186, Amarillo, Texas Johnson, 80, 4, S 28, B Y, A&B sur, 330 ft from n and e lines of sw se. Skelly, Tulsa, Okla., R. G. Byrd, 2, Wm. Cole sur, 1320 ft from n and e lines of survey.

LIBERTY COUNTY — Hampton-Tucker, Beaumont, N. Bell, 80, 1, B 4, HT&B sur, 2100 ft from n and 150 ft from w line.

LIMESTONE COUNTY — Irish Oil Co., Tyler, J. P. Lindley, 35, 1, J. Boyd sur, 150 ft from n and w lines. H. R. Cullen, Houston, O. F. Jackson, 47, 1, A. Varela sur, 650 ft from n and 150 ft from w line.

MEDINA COUNTY—Sun, Dallas, Wm. Edgar, 335, 1, No. 362 J. Burrell sur, 450 ft from e and 150 ft from s line. Sunflower Oil Corp., San Antonio, M. Modfield, 640, 1, No. 532 sur, 3340 ft from e and 1335 ft from s line. R. M. Perkins, San Antonio, R. J. Taylor, 40, 1, S 136, Castro sur, 270 ft from w and 1200 ft from s line.

NAVARRO COUNTY—W. M. Young, Corsicana, I. R. Carl, 22, 3, W. Powell sur, 300 ft e of No. 2; T. J. Walton, 30, 2, W. Powell sur, 300 ft n of No. 1.

PECOS COUNTY — Dixie Oil Co., Inc., McCamey, F. E. Toberg, 640, 5, No. 539 A&B sur, 300 ft e of No. 4. Gulf, Fort Worth, I. G. Yates, 31, RCSL sur, 7443 ft from w and 1105 ft from s li sur.

PALO PINTO COUNTY — Cunningham & Blackburn, Fort Worth, W. M. Thomas, 400, 1, Blk 4 sur, north central part of lease. Prairie, Ranger, Allen-Ritchie, 2, S 1, CT Ry. sur, 1269 ft from n and 750 ft from e line.

REFUGIO COUNTY — Houston Oil Co., Houston, Jeter, 1, Refugio sur, 150 ft from s and e lines of Blk 50; T. O'Connor, 100, 1, Jas. Hewitson sur, 150 ft from n and w lines; R. Lambert, 50, 2, Refugio sur, Lot 5, 789 ft sw of No. 1. L. L. Smith, Refugio, N. Brown, 2½, 1, Refugio sur, 156 ft from s and w lines of Blk 115.

SHACKELFORD COUNTY — McMeans & Bridwell Oil Co., Wichita Falls, Albany Nat. Bk., 50, 2, 1532 TE&L sur, 1050 ft from n and 150 ft from e line. F. N. Palm et al, Albany, V. Palm, 40, 6, S 44, Blind Asy. sur, 200 ft from s and 450 ft from e li ne se. E. J. Stump et al, Wichita Falls, Brewster, 120, 2, S 48, B 2, Blind Asy. sur, 810 ft from n and 450 ft from w li sw. Koutt et al, Wichita Falls, G. L. Bouldin, 80, 1, S 10, B 3, H&TC sur, 677 ft from s and 1842 ft from e li sec. Loggie & Arendt Oil Co., Albany, J. Block, 320, 12, 389 TE&L sur, 1300 ft from nw and 2100 ft from ne li sec. T. K. Simmons, Tulsa, Okla., B. C. Harvey, 240, S 5, B 14, T&P sur, 1020 ft from n and 300 ft from e li ne¼.

STEPHENS COUNTY—Texas Fidelity Oil Corp., Fort Worth, M. I. Lassiter, 120, 1, S 78, B 4, T&P sur, center of nw sw. Arrow-Head Oil Co., Dallas, H. D. Post, 160, 5, B 5, T&P sur, 150 ft from n and 330 ft from e li se. Hickok Prod. Co., Eastland, M. M. Hamil, 160, 2, S 5, LAL sur, 1730 ft from n and 1380 ft from w li sec.

THROCKMORTON COUNTY — Webb & Gaskill, Breckenridge, Geo. Eaton, 20, 2, 689 TE&L sur, 372 ft n of No. 1. Murback & Holmberg, Wichita Falls, A. B. Callahan, 20, 1, 687 TE&L sur, 466 ft from s and w lines of nw.

VAN ZANDT COUNTY—Pure, Fort Worth, E. L. Fowler, 32, 5, Jno. Walling sur, 105 ft

from w and 750 ft from s line; A. D. Clark, 36, 3, Jno. Walling sur, 212 ft from n and 105 ft from e line; M. R. Bolin, 2, 1, M. Gross sur, 50 ft from n and 245 ft from s line; E. L. Fowler, 32, 3, Jno. Walling sur, 109 ft from w and 150 ft from s line; W. E. Morris, 2, 1, M. Gross sur, 50 ft from w and 93 ft from s line. Cranfill & Reynolds, Houston, W. Ledbetter, 2, Wm. Daniels sur, 231 ft from s and w lines. Shell, Dallas, I. P. Tunnell, 48, 4, M. Gross sur, 150 ft from w and 268 ft from s line; J. C. Stewart, 16, 1, M. Gross sur, 285 ft from n and 341 ft from w line.

WICHITA COUNTY—Mid-Continent Holding Corp., Wichita Falls, Mrs. N. Rumple, 91, 6, B 8, PPCSL sur, 92 ft w of No. 1. Arkansas Fuel Oil Co., Wichita Falls, Kemp & Kempner A, 33, 32, B 82, WVFL sur, 400 ft from e and 270 ft from s line; 31, 150 ft from n and 570 ft from w line. King Royalty Co., Wichita Falls, J. W. Ferguson, 40, 20, J. W. Robertson sur, 1275 ft from w and 150 ft from s line. W. R. Fullerton et al, Wichita Falls, Foster-Allen, 100, 4, HT&B sur No. 1, 300 ft s of No. 2. Shappell Oil Co., Wichita Falls, Kemp & Kempner, 156, 1, WVFL sur, 2330 ft from e and 750 ft from s line of Blk. 54. Marvin Blair, Electra, W. B. Honaker, 20, 1, C& M sur No. 1, 150 ft from n and w lines. Bridwell Oil Co., Wichita Falls, L. Sparks, 105, 1, C. T. Ry. sur, 200 ft from w and 760 ft from n line. Steele Drilling Co., Wichita Falls, E. A. Schultz, 100, 1, Jas. Cole sur, 1550 ft from n and 150 ft from w line. Arkansas Fuel Oil Co., Wichita Falls, Kemp & Kempner, A, 60, 34, B 82, WVFL sur, 150 ft from n and w lines. A. T. Russell, Electra, Sharp, 50, 2A, S 12, AB&M sur, 450 ft from n and 900 ft from e line; Bridwell, 60, 1, AB&M sur, 850 ft from w 150 ft from s line. M. Staniforth Wichita Falls, R. L. Crudup, 60, 5, DCSL sur No. 4, 300 ft s of No. 2.

WILBARGER COUNTY—Davis Oil Corp., Vernon, W. T. Waggoner, 36, 9, S 35, B 2, H&TC sur, 150 ft from n and 450 ft from w line. Atlantic, Dallas, Waggoner, 600, 14, S 50, B 2, H&TC sur, 150 ft from s and e lines of sw. Dixie Oil Co. & Golding & Cochran, Electra, W. T. Waggoner, K5, S 4, B 17, H&TC sur, 505 ft from n and 205 ft from w li ne sw. Staley, Wynne & Co., Wichita Falls, W. T. Waggoner, 80, 19, S 32, B 4, H&TC sur, 255 ft from s and e lines.

WILLIAMSON COUNTY—J. L. Collins & Co., Corsicana, Mrs. M. V. Lawrence, 27, 1, S. Miller sur, 150 ft from n and e lines. Big Indian Royalty Pool, Oklahoma City, Okla., Mrs. M. V. Lawrence, 3, 1, S. Miller sur, 92 ft from n and 130 ft from e line. Ed Mead, Taylor, L. Lawrence, 5, 1, S. Miller sur, 150 ft from n and e lines. Chapman & Murray, Taylor, J. J. Sides, 5, 1, P. Protor sur, 150 ft from e and 230 ft from s line; 2, 150 ft from s and w lines.

WASHINGTON COUNTY — Sun, Dallas, Mrs. B. R. Clay, 757, 4, J. F. Perry sur, 1350 ft from sw and 1054 ft from se line.

WEBB COUNTY—South Texas Prod. Co., Laredo, S. Benavides, 10, 1, B 18, M. Arispe sur, 200 ft from nw and 150 ft from sw line.

WOOD COUNTY—Geo. L. Pace, Wichita Falls, G. Dickey, 80, 1, J. C. Clark sur, center.

WHEELER COUNTY—H. T. McGee, Amarillo, W. L. Jolly, 160, 1, S 15, B A8, H&GN sur, 1260 ft from n and 330 ft from e line ne¼.

YOUNG COUNTY—N. D. Goldsmith, Olney, Hausler, 64, 1, B 2, J. Pointevent sur, 150 ft from n and 750 ft from e line. C. J. Kleiner, Cisco, E. M. Remington, 40, 1, 2248 TE&L sur, 1016 ft from w and 1716 ft from s lie sec. Roeser & Pendleton & Slick, Fort Worth, F. T. Arnold, 16, 1, P. Pior sur, 265 ft from n and 382 ft from e line. J. A. Cato, Fort Worth, O. R. Minor, 2, 158, TE&L sur, 150 ft from s and w lines. W .C. Duncan et al, Wichita Falls, J. W. Jones, 40, 1, S. Sallee sur, 150 ft from n and w lines. Smith-Archer Oil Co., Amarillo, 40, 1, No. 250 sur, 150 ft from n and w lines of ne¼. C. W. Lewis, Wichita Falls, J. T. Lowe, 60, 1, 59 TE&L sur, 450 ft from w and 150 ft from s line. Brihill Oil Corp., Fort Worth, H. F. Peters, 20, 2, H. F. Peters sur, 300 ft ne of No. 1. P. K. Deats, Graham, J. F. Barrett, 40, 1, 2245 TE&L sur, 150 ft from s and e lines. Perkins & Cullum, Wichita Falls, E. J. Dunagan, 66, 6, 157 TE&L sur, 1050 ft from s and 150 ft from w line; 7, 450 ft from s and w lines; 4, 750 ft from s and 150 ft from w line; 5, 750 ft from w and 150 ft from s line. G. W. Cooper, Wichita Falls, H. Benson, 20, 1, 157, TE&L sur, 150 ft from s and e lines. T. F. Hunter, Wichita Falls, H. Benson, 4, 1, 157 TE&L sur, 150 ft from s and e lines; 2, 150 ft from n and e lines. Hunter Oil Corp., Wichita Falls, H. H. Benson, A, 30, 3, 157 TE&L sur, 450 ft n of No. 2. Roeser & Pendleton & Robert Oil Corp., Fort Worth, Ragland, 91, 1, J. W. Manning sur, 330 ft from s and w lines. Texas Co., Wichita Falls, W. A. Appling, 80, 2, 164 TE&L sur, 150 ft from s and e lines. M. E. Smith, Olney, E. Hill, 20, 1, 195 TE&L sur, 450 ft from e and 150 ft from s line. Wooten & Reed et al, Graham, H. F. Haygood, 60, 1, 1468 TE&L sur, 1113 ft from n and 700 ft from w li sec. Panhandle Ref. Co., Wichita Falls, E. C. Keith, 100, 1, 266, TE&L sur, 150 ft from s and e lines of ne¼. J. E. Morrison, 40, A1, B. Hammond sur, 200 ft from n and 150 ft from w line. Terrell & Remington, 40, 3, 2248 TE&L sur, 450 ft from n and 467 ft from w line sec. T. F. Hunter, Wichita Falls, H. L. Leberman, 1, B 1, Leberman sur, 150 ft from n and e lines. Lowe, Delaney & Carter & Fowler, Olney, E. Hill, 62, 2A, 195 TE&L sur, 422 ft s of No. 1. O. H. Rahtman, Olney, Kemp, 60, 14, 401 TE&L sur, 1150 ft from w and 1200 ft from s li sec. E. R. Riggs, Graham, B. P. Larimore, 40, 2, 2247 TE&L sur, 467 ft from w and 150 ft from s line sec. Independent Oil & Gas Co., Fort Worth, M. B. Jarnagan, 50, 3, W. J. Orrick sur, 300 ft s of No. 2. Christie Bros., Wichita Falls, M. B. Jarnagan, B, 50, 2, W. G. Orrick sur, 400 ft ne of No. 1. McLester Oil Co., Eastland, P. W. Pitzer, 9, 1, P. Pier sur, 250 ft from n and 300 ft from e li sur. Perkins, Cullum & Pace, Wichita Falls, M. Sadau, 1, B 13, Olney Dev. sur, ne c of lot 1. Fain-McGaha Oil Corp., Wichita Falls, Olney, 2, B 5, Bloodworth No. 2 se c of lot 6. St. Staley Wynne & Co., Wichita Falls, C. C. Carpenter, 1, Bloodworth Add. sur, center of Blk. 6. Pitzer & West, Breckenridge, J. E. Morrison, 53, 2C, B c, B. W. Hammons sur, 155 ft from n and 265 ft from w line. Kay & Fultz, Graham, Ragland, 91, 1, J. W. Manning sur, 330 ft from e and 200 ft from s line. Perkins & Cullum, Wichita Falls, G. R. Lemmond, 110, 8, S 1, BBB&C sur, 300 ft s of No. 6. Bridwell & Petroleum Prod. Co., Wichita Falls, J. B. Daniel, 40, 3, 164, TE&L sur, 1083 ft from s and 1421 ft from e line sec. Ringer & Omohundro, Wichita Falls, E. C. Keith, 20, 3, 268, TE&L sur, 300 ft w of No. 1. Panhandle Refg. Co., Wichita Falls, J. D. Lowe, 40, 1, 250, TE&L sur, 755 ft from n and 750 ft from w line sec. C. J. Taack, 40, 5, 263, TE&L sur, 150 ft from n and w lines. W. H. Hammon, Wichita Falls, D. L. Keith, 80, 1, S 28, TE&L sur, 150 ft from s and w lines of ne¼.

ZAPATA COUNTY—J. J. O'Hern, Laredo Texas, L. Garcia, 200, 1, Fansler sur, 150 ft from s and e lines.

ZAVALLA COUNTY—Jno. L. Nelson, Fort Worth, T. R. Price, 81, 1, B 12, W. E. Erskine sur, No. 33, center.

LOUISIANA

BOSSIER PARISH—The Texas Co., Shreveport, J. W. Wilkinson 8, 36-23n-12w, 990 ft s and 990 ft w of ne c of sec.

CALCASIEU PARISH—Gulf. Refg. Co. of La., Houston, Lutcher-Moore 22, 19-9s-12w, approx. 1255 ft n and 232 ft w of se c of sw.

CADDO PARISH—The Texas Co., Shreveport, Leonard Fee 3, 29-20n-15w, 2440 ft w and 576 ft s of ne c of sec.

CALCASIEU PARISH—Union Sulphur Co., Sulphur, Fee 761, 29-9s-10w, 1860 ft n and 2043 ft w of c of sec. Vacuum Oil Co., Houston, Farquhar 7, 8-10s-9w, 350 ft s and 150 ft e of nw c ne of se. Wilson Broach Co., Beaumont, Strip 2, 33-10s-12w, 280 ft n and 126 ft e of sw c se of ne.

CAMERON PARISH—Duhon Oil & Mineral Co., Hackberry, Koonce Andrus 1, 22-12s-10w, 50 ft s and 50 ft e of nw c ne of se of se.

DE SOTO PARISH—Arkansas Fuel Oil Co., Shreveport, C. B. Scott 2, 32-14n-13w, 330 ft n and 330 ft e of sw c se of ne.

MOREHOUSE PARISH—Southern Carbon Co., Monroe, Fee 5, 16-20n-4e, 1980 ft s and 660 ft w of ne c of sec. Southern Carbon Co., Monroe, Fee 56, 15-20n-4e, 660 ft s and 660 ft e of nw c of sec.

OUACHITA PARISH — Lyons Gas Co., Shreveport, Albright 2, 13-18n-3e, 2171 ft w and 1627 ft s of easterly c of sec. Ouachita Natl. Gas Co., Shreveport, Smith 13, 37-20n-4e, 5684 ft e and 8148 ft n of nw c of sec, 38 in sec 37.

RICHLAND PARISH — Southern Carbon Co., Monroe, M. L. McCoy B-1, 32-16n-6e, 660 ft s and 660 ft e of nw cor of ne. Southern Carbon Co., Monroe, T. R. Sartor C-1, 29-16n-6e, 660 ft s and 660 ft w of ne c of sec.

SABINE PARISH—Mr. H. E. Granville, Ft. Worth, R. L. Parrott 1, 31-8n-12w, 1052 ft s and 661 ft e of nw c of sec. Ohio Oil Co., Shreveport, Bowman-Hicks Lbr. Co. 5, 33-8n-12w, 330 ft n and 330 ft e of sw c se of sw. Mr. A. H. Tarver, et al, Shreveport, Sabine State Bank & Trust Co. 2, 26-8n-12w, 300 ft n and 300 ft e of sw c of nw. Toteco Oil Corp., Houston, La. Long Leaf Lbr. Co. 1, 18-6n-12w, 330 ft s and 100 ft w of ne c of sw. Mr. Irving H. Wheatcroft, Shreveport, Sabine Lbr. Co. 1, 31-8n-12w, 550 ft n and 603 ft w of se c sw of ne.

ST. LANDRY PARISH—Gulf Refg. Co. of La., Houston, Ovide Lahaye 2, 4-6s-5e, 150 ft from w line and 150 ft from sw line of Ovide Lahaye 120 acre tract. Mr. Alex. Rice, Tr., Shreveport, S. W. Futral 2, 20-6s-5e, 3165 ft s and 9 ft e of nw c of sec. Mr. Alex Rice, Tr., Shreveport, S. W. Futral 3, 20-6s-5e, 3619 ft s and 40 ft nw c of sec.

ST. MARTIN PARISH—Rycade Oil Corp., Houston, Bayou Boullion 10, 13-9s-8e, 3332 ft n and 3505 ft w of se c of sec.

UNION PARISH—Stovall Drlg. Co., Monroe, Murray 1, 32-23n-4e, 1650 ft n and 330 ft w of se c of sw.

WEBSTER PARISH—Merrick Oil Co., Inc., Little Rock, B. L. Slack 2, 36-23n-11w, 150 ft s and 150 ft w of ne c sw of se.

OKLAHOMA

CADDO COUNTY—Mid-Kansas Oil & Gas and Ramsey Petroleum Co.'s Wade 9, nw c sw ne sw, 2-5-9w.

CARTER COUNTY—K.W.B. Drilling Co.'s Noble 1, sw nw se, 14-2s-2w.

CLEVELAND COUNTY — I.T.I.O.'s Reynolds' 2, se ne nw, 6-10-2w.

CREEK COUNTY—Wilcox O&G et al 5, se se nw, 11-17-10e.. W. O. Allen et al 1, nw c sw sw, 3-17-10e; Sells et al's Bough 1a, nw c ne ne, 22-19-9e; Abbott et al's Allen 1, nw c se nw, 12-19-9e; Gled Oil Co. et al's Timothy 1a, ne c se, 36-19-7e.

GARFIELD COUNTY—Continental's Meisner 1, ne nw nw, 10-20-4w.

LINCOLN COUNTY—Magnolia's Winship 1, ne c sw, 2-13-4e.

MARSHALL COUNTY — Bilbo Oil Trust Co.'s Null 5, nw c sw ne nw, 24-5s-5e; Max Westheimer's Davis 3, sw se nw, 30-5s-6e; F. W. Merrick's Null 18, nw c se nw, 24-5s-5e; Flemming and Kimbrell's Null 5, sw ne nw, 24-5e-5e.

MUSKOGEE COUNTY — J. M. Foltz's Spaulding 3, nw c ne sw, 9-15-18e; J. E. Wallace's Colbert 15, cel sw ne, 14-14-14e; J. M. Foltz's Mackey 2, ne c sw ne sw, 9-15-18e; C. F. Finefield et al's Rentie 2, se c sw ne nw, 9-15-18e; C. F. Finefield et al's Rentie 1, se c ne nw, 9-15-18e; E. A. Hollie et al's Stedham 1, ne c nw se, 8-15-18e; H. L. Jolly's Brown 1, se c ne ne, 8-15-18e; J. L. Haner's Stedham 6, nw c ne ne se, 8-15-18e; Ash Brothers' Spaulding 1, ne c nw se, 8-15-18e; P. Boyle et al's Russell 4, sw c ne se, 19-15-16e; C. O. Buckles' Barnett 6,cnl ne se, 8-15-15e.

OKFUSKEE COUNTY—Atlantic Oil Prod Co.'s Micco 3, cwl sw sw, 12-10-11e; Suppes et al's Severs 3 "B", c sw se, 35-11-9e.

OKLAHOMA COUNTY — I.T.I.O.'s Huffman 1, ne nw sw, 14-11-3w; I.T.I.O.'s Pasedena Heights 3, nw ne sw, 14-11-3w; I.T.I.O.'s Habeggar 2, sw se nw, 14-11-3w; I.T.I.O.'s Carrico 1, ne sw nw, 14-11-3w; I.T.I.O.'s Salsman 5, se sw nw, 32-11-2w; I.T.I.O.'s Emmerson 11, sw nw sw, 30-11-2w; I.T.I.O.'s Katy T. 1, se c sw, 35-12-3w; Coline Oil Co.'s Clauer 12, se ne se, 25-11-3w; Slick and I.T.I.O.'s Huddleston 1, se sw nw, 14-11-3w; A. V. Kedney's Seal-Key 1, nw sw sw, 2-11-3w; Hall and Briscoe's Mueller 1, sw se nw, 2-11-3w; Anderson and Pritchard Corp.'s Gibbons 1, se ne ne, 2-11-3w; Slick and Atkinson's Milner 2, cnl se sw nw, 1-11-3w; Slick and Atkinson's Baker 4, ne sw nw, 1-11-3w; Slick and Atkinson's Baker 3, csl nw se nw, 1-11-3w;

Slick and Atkinson's Baker 2, cnl sw se nw, 1-11-3w; I.T.I.O.'s Phillips 1, sw c se nw sw, 1-11-3w; Anderson & Pritchard Corp.'s Pest House 2, nw sw nw, 1-11-3w; Anderson & Pritchard Corp.'s Pest House 1, sw c nw, 1-11-3w.

OKMULGEE COUNTY — J. H. Rebold's Brooks 4, nw c sw ne, 6-15-13e.

OSAGE COUNTY—Millard and Stanley, 2, sw nw nw, 6-21-9e; Boston Heights Oil Co., et al, 3, se ne se, 10-21-8e; Mid-Co Oil Co., 20, nw ne se, 18-22-10e; W. D. Gray, 6, sw ne nw, 19-22-11e; Western American Oil Co., 1, nw c se, 28-23-6e; H. E. Hulen, 3, ne c nw se sw, 3-25-11e; Atlantic Oil Prod. Co., 6, sw se sw, 19-25-8e; Peters Pet. Co. & P&R, 8, 22-27-11e; Winona Oil Co., 14, nw ne ne, 20-29-9e.

PAWNEE COUNTY — Mid-Continent Pet. Corp.'s School Land 36, ne sw se, 36-20-5e; Peter Adamson, Jr.'s Ackley 1, nw c se nw se, 14-20-9e; Hay et al.'s Copeland 6, ne c sw sw, 26-20-9e; Cimmaron Oil Co.'s Smelzer 3, sw nw nw, 29-20-9e.

PONTOTOC COUNTY — Sunray Oil Co.'s McCall 16, sw c nw, 17-5-8e; Dixie Oil Co.'s Roper 1, nw se nw, 32-5-5e (owdd); Benedum & Trees's Norris 1, ne nw sw, 30-5-5e; Brydia Oil Co.'s Burke 1, se c, 32-5-5e.

POTTAWATOMIE COUNTY—Transcontinental's Miller 2, sw ne ne, 22-6-3e.

SEMINOLE COUNTY—Magnolia's Reed 5, ne nw se, 13-5-7e; Barnsdall Oil Co.'s Harjo 1, se ne nw, 20-6-6e; Mid-Continent Pet. Corp.'s Harjo 1, ne sw sw, 20-6-6e; Gypsy's Harjo 1, se ne sw, 20-6-6e; W. B. Pine's Cheparney 1, se nw ne, 20-6-6e; Twin States Oil Co.'s Charlie 3 "A", nw ne ne, 20-6-6e; Hilton, Phillips et al's Hyde 3, nw se ne, 20-6-6e; Mid-Continent Pet. Corp.'s Harjoche 1, ne c sw, 17-6-6e; Barnsdall's Johnson 3, sw se se, 17-6-6e; Carter Oil Co.'s Rogers 3, nw sw se, 2-8-5e; Amerada Pet. Corp et al's Ground 6, ne sw nw, 23-9-5e; Magnolia's Ground 4, nw se nw, 23-9-5e; Carter Oil Co. et al's Cheparney 1, se c, 30-10-6e.

STEPHENS COUNTY—Carl Wylie et al's Fair 1, se sw se, 33-1n-3w; Barney et al's Funk 1, sw c se, 19-1n-8w.

WAGONER COUNTY—W. J. Metzger et al's Ford 1, cnl sw, 5-15-18e.

KANSAS

BUTLER COUNTY — Noble and Jones' Ousher 1, c sw ne, 4-23-4e; Sullivan et al's Newcomb 1, nw c se, 6-27-4e; E. W. Marland, Inc.'s Anderson 1, sw c ne, 6-27-4e; Tidal Oil Co.'s Corbin 1, se c nw, 6-27-4e.

CHASE COUNTY—Chase County Pipe Co.'s Meirhoff 1, c sw nw, 31-19-6e.

COWLEY COUNTY—Tom Fine's Boyd 1, nw c ne, 32-32-4e.

McPHERSON COUNTY — Barnsdall Oil Co.'s Krehbiel 5, se nw se, 4-21-3w; Shell's Neufeldt 1, nw c 15-21-3w; Sinclair O&G's Morehouse 5, nw se ne, 4-21-3w; Sinclair O&G's Morehouse 4, sw se ne, 4-21-3w.

MORRIS COUNTY—Arrow O&G's Wilde 1, (owdd) sec, 15-17-7e.

RICE COUNTY—Shell Petroleum Corp et al's Sledd 1, c sw, 33-19-6w.

SUMNER COUNTY—Gypsy Oil Co.'s Endicud 2, nw sw sw, 16-35-3w.

Plan Maverick Pipe Line

Denver. — A rumor considered rather substantial is receiving much credence here to the effect that Continental Oil Company will lay a pipe line from the Maverick Springs field, in Fremont County, Wyoming, to the town of Pavillion. At the same time, the Chicago & Northwestern Railroad will build a line from Riverton, Wyoming, to Pavillion so that the Maverick Springs field will have an outlet by pipe line and rail for the first time in its history.

The railroad will have a double inducement in that it is believed that sugar beet factory will build at Pavillion and freight for that and the oil field will make the proposition particularly inviting.

Third and Largest Gas Well Completed In Jackson Area

JACKSON, Miss.—After having had three wells which showed much gas but always with a large quantity of salt water, the Jackson area, comprising Hinds and Rankin Counties, Mississippi, has at last added a commercial gas well and it is incidentally the largest in the state.

The new gasser is Love Petroleum Company's Mendoza 1, Section 11-5n-1e, Hinds County, gauged at 28,569,920 cubic feet with 1000 pounds rock pressure, and is making the gas from a total depth of 2446 feet. Six and five-eighths-inch casing was set at 2444 feet, using 75 sacks of cement, after gas showed in the top of the Midway rock. The gauge was made by officials of the Louisiana Conservation Commission and was larger than had been anticipated, as the flow had been estimated at 15,000,000 to 20,000,000 feet. So far no salt water has appeared with the gas.

Several weeks ago Gulf Refining Company of Louisiana, which had taken over 7000 acres in the Jackson area, including Home Oil Company's Rainey holdings in Rankin County, obtained 5,000,000 to 7,000,000 feet of gas with a large quantity of salt water and a trace of heavy oil, about 13 gravity, when it drilled in Rainey 1, also in Section 13-5n-1e, at a total depth of 2520 feet. In an effort to shut off the water, the well was plugged back to 2500 feet and drilled in the well but salt water increased and the gas decreased. The water was shut off and this hole is now down to a depth of 2649 feet, where it was forced to set 222 sacks of cement in an effort to regain returns lost at that depth.

The Mendoza 1 is the third commercial gasser in the state of Mississippi. Two small gas wells are producing in the Amory district of Monroe County, in Northeast Mississippi, the first having been completed by P. J. McAlpine and associates in 1925 as a 5,000,000-foot well. This was on a location selected by H. D. Easton, Shreveport geologist, who mapped the structure resulting in the discovery of the Zwolle oil field in Sabine Parish, Louisiana. Last year after several subsequent tests were drilled a second gasser of 200,000 cubic feet capacity was completed at Amory, where just now Amory Development Company's Hall 1, Section 8-13-17, was recently shot at 2408 to 2412 feet and a few gallons of oil recovered. Total depth of the old hole in this test is 3045 feet. Plans are now under contemplation to shoot the hole in this test from 2387 to 2393 feet.

Sixteen Tests Under Way

There are 16 tests under way in the Jackson area at present, including derricks up. The completion of the first commercial gasser in this area is expected to spur activity considerably.

Jackson Oil & Gas Company's Taylor 1, Section 35-6-1e, Hinds County, is trying to pull a frozen drill stem from the hole with 2900 feet the total depth. Fifty barrels of oil have been used to lubricate the hole.

Louisiana Gas & Fuel Company's Harris 1, Section 35-6-1e, cored 10 feet of Midway chalk to 2531 feet and the well is being bailed to test. It tested salt water when plug was drilled at 2506 feet.

Love Oil & Gas Company's Bridges-Hilzim 1, in the same section, is waiting orders after spudding in and is expected to go down immediately in view of the completion of the Mendoza 1.

Mrs. Ella Rawls Reeder, who had drilled to 2905 feet in State Land 1, Section 25-6-1e, before the flurry of recent months, is waiting orders after some four-inch drill pipe had been pulled from the hole, leaving a part still caught.

Cane River Oil & Gas Company has erected a 64-foot derrick for a 1500-foot test of Tertiary formations. This is Lufkin 1, Section 15-5-1e.

Dome Oil & Gas Company's Elton 1, Section 5-4-1e, south of Jackson, is having nine-inch casing set at 818 feet, after penetrating six feet of sand to 824 feet with solid limestone encountered from 810 to 818 feet.

James A. Weir and associates have derrick up for Holiday and Ross 1, Section 8-6-2e, and are waiting for a rig. Progressive Oil & Gas Company's Mayes 1, Section 2-5-1e, is a derrick. Tri-State Oil & Gas Company's E. S. Wilson 1, Section 23-6-1e, is a derrick. Derrick is up and tools are being awaited at Jackson Oil & Gas Company's Central Cotton Oil Company 1, Section 3-5-1e. Magnolia State Oil Company's Brown 1, Section 19-6-1e, is a derrick.

Interior Oil Company's Moore 1, Section 28-6-2e, Rankin County, is drilling at 900 feet. Pearl River Oil & Gas Company has derrick up and is waiting for a rig at Littlefield 1, Section 12-5-1e, Rankin County.

Lauderdale Oil & Gas Company's Lackey 1, Section 2-7-16, Lauderdale County, Mississippi, is coring a fine sand with hard streaks at 3087 feet, after plug was drilled after several months delay, at a depth of 2816 feet.

In North Mississippi, Alcorn County, Alcorn Petroleum Company is fishing for tools and a casing spear at 2393 feet after getting out all but four joints of six-inch casing in Matthews 1, Section 14-2s-7e. Total depth is 2735 feet.

Carter Oil Company and J. D. Collette are coring hard sandy shale at 2434 feet in Blackmer 1, Section 14-11-4w, Yalabousha County, Northwest Mississippi. A. D. Morton and associates are drilling hard white limestone at 905 feet in O'Neal Heirs 1, Section 8-2s-13w, Lauderdale County, Alabama.

Chester County Oil & Gas Company is drilling at 1844 feet in Montgomery 1, in Decatur County, Tennessee.

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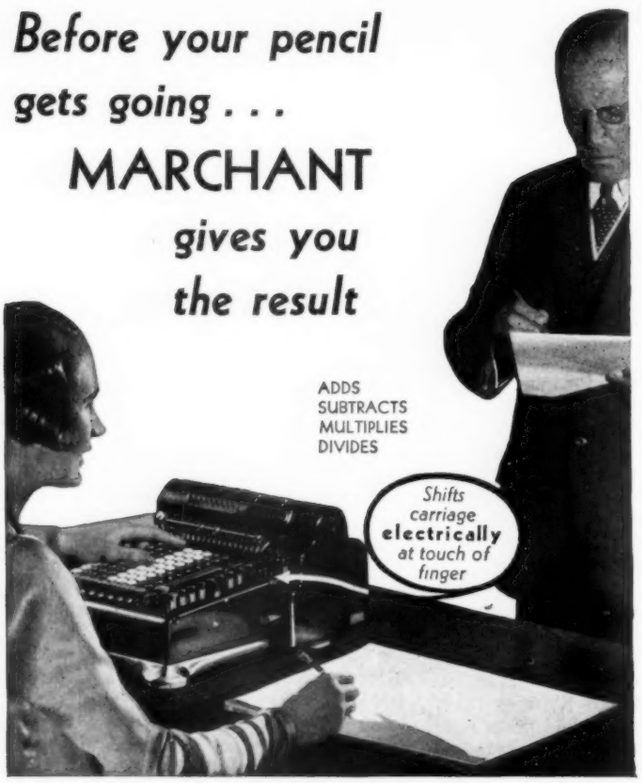

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WILDCATS FROM ALL SECTIONS

KANSAS

SUMNER COUNTY—Davidson et al, Strickland 1, sw se, 12-35-1w, rig. Hydraulic Oil Co.'s State land 1, nw se, 22-34-43w, spd and sd.

MORTON COUNTY—Argus Gas Co.'s Little 1, c se¼ 24-34-40w, lcn.

STEVENS COUNTY—Argus Gas Co.'s Asher 1, c nw¼ 7-35-37w, ru; Watson 1, c ne, 27-34-40w, lcn; Hicks 1, c se, 12-34-39w, r.u.s.t; Armstrong 2, c sw¼ 4-34-39w, ru; Armstrong 3, c se¼ 3-34-39w, lcn. W. Sidwell et al's Kelly 1, sw ne, 16-34-38w, sd 1600 ft. Argus Gas Co.,'s Mangle 1, c sw¼, 6-34-39w, lcn. Hayward 1, c sw¼, 9-34-39w, ru. Thompson 1, c sw¼, 7-34-39w, lcn. Parker 1, c ne, 30-34-38w, sd 2650 ft co. Rolla State Bank 1, c nw¼, 8-34-39w, lcn. Dixon 1, c se¼, 18-34-39w, ru. Thompson 1, c nw¼, 18-34-39w, lcn. Barrows 1, c sw¼, 32-34-38w, dr 600 ft.

BARBER COUNTY—Skelly's Temple Ranch 1, sw ne, 13-34-15w, top Viola 5241 ft dr 5338 ft.

HARVEY COUNTY — Harris and Hahn's Hawkins 1, sw se, 9-24-1e, dr 4225 ft.

SUMNER COUNTY—Shawver et al Curry, c nw sw, 26-34-2e, dr 1250 ft. Kratz 2, c sw nw nw, 26-32-2e, spd and sd.

STEVENS COUNTY—Argus Oil Co.'s Pride 1, c sw, 25-33-37w, dr 1252 ft. Sherwood 1, c nw¼, 33-33-37w, r.u.s.t. 8-in at 2585 ft.

CHAUTAUQUA COUNTY—Valentine's Patterson 1, nw se sw, 2-23-9e, dr 1690 ft sd.

STEVENS COUNTY—Mangle's Youngren 1, c se nw, 24-33-39w, spd and sd.

MORTON COUNTY—Argus Gas Co.'s Haws 1, c sw¼, 31-32-39w, lcn.

STEVENS COUNTY—Argus Gas Co.'s Gustafen 1, c sw¼, 29-32-36w, lcn a. Roach 1 c ne¼, 34-32-38w, lcn. Cross 1, c se, 19-32-37w, dr 2085 ft. Porter 1, c sw¼, 27-32-37w, dr 1670 ft.

BARBER COUNTY—Phillips & Robertson's Powell 1, c se se, 11-32-10w, 5m gas, sd 4023 ft.

COWLEY COUNTY—Prairie's Dosbaugh 1, se c 10t 27, 18-32-8e, ur 5-in sd 2882 ft. Roth & Faurot's Adams 1, c sw ne ne 19-32-8e, dr 1825 ft fsh tools. Tom Pine's Boyd 1, nw ne, 32-32-4e, rig.

HARPER COUNTY—Beeler et al's Bear 1, c ne 21-31-6w, sd 1830 ft.

SUMNER COUNTY—Slick, Pryor & Lockhart's Peasel 1, 33-31-1w, td 4163 ft hfw pm 3680 ft. Hatfield et al's Dauber 1, ne c 18-30-1w, spd and sd.

KIOWA COUNTY—Phillips-Prairie's Bean 1, ne se 10-30-17w, rig.

GRANT COUNTY—McKenna et al's Sullivan 1, ne c 12-29-36w, rig.

EDWARDS COUNTY — McKenna et al's Ralston 1, c ne 14-26-20w, ru.

FORD COUNTY—McNabb et al's Fowler 1, c se 26-27-22w, sd 400 ft.

BUTLER COUNTY—T. C. Johnson's Heath 1, ne se, 12-27-3e, rig.

GREENWOOD COUNTY — Mallory et al's Deuchfield 1, se nw, 12-27-9e, sd 660 ft. L. C. Mahan's Binns 1, se nw, 23-27-11e, dr 775 ft. F. Konday et al's Rook 1, nw ne ne, 7-27-12e, setg 6 -in at 1820 ft.

PRATT COUNTY—Wilson's Unknown 1, sw nw, 7-26-15w, td 3255 ft hfw ur 8-in.

RENO COUNTY—Valerius's Stevens 1, c ne se ne, 6-26-7w, dr 2870 ft.

SEDGEWICK COUNTY—Travender et al's McLean 1, se sw se, 23-26-1w, sd 975 ft. Johnson's Petrie 1, sw se, 25-26-1w, dr 3185 ft.

BUTLER COUNTY—Liggett's Guanther 1, c se ne nw, 29-26-7e, spd and sd.

FORD COUNTY—Swain et al's Kenthorne 1, c nw, 21-25-24w, dr 2250 ft.

EDWARDS COUNTY—Dixie-Amerada's McCarty 1, sw, 22-25-17w, td 4755 ft sd.

WOODSON COUNTY — John Harwood's Good 1, c sw nw ne, 36-25-13e, dr 1220 ft sd.

GREENWOOD COUNTY—Bundy-Smith & O'Neil's Ford 1, ne nw, 28-25-13e, spd and sd.

PAWNEE COUNTY—Skelly's Melhouse 1, c se, 34-23-17w, dr 1250 ft.

STAFFORD COUNTY—Gibson et al's Mueller 1, c sw 11-23-14w, dr 4139 ft hfw.

BUTLER COUNTY—Elam et al's Hopkins 1, c se sw se, 26-23-4e, dr 700 ft.

ABBREVIATIONS

NOTE—The following is the explanation of abbreviations, signs, etc., used in completion and wildcat reports: *—dry hole, abandoned well; ‡—salt water; †—junked and abandoned; ¶—million feet or gas; abn—abandoned; bbls—barrels; b.s.—basic sediment; cas—casing; co—cleaning out; dk—derrick; dr—drilling; fsh—fishing; ft—feet; in.—inches; lcn—location; m—milling; n, s, e, w—north, south, east, west; r—reaming; sd—shut down; sdtr—sidetracking; sp—spudding; sr—straight reaming; std—standardizing; sw—salt water; td—total depth; ur—underreaming; wo—workover; wosr—waiting on standard rig.

STAFFORD COUNTY—Midwest's Richardson 36, se c, 36-22-12w, sd 130 ft. Boucher's Groves 1, ne c, 9-22-11w, dr 1585 ft. Christensen 1, nw c, 22-22-11w, sd 565 ft.

RENO COUNTY—Witt et al's Olsen 1, se nw, 14-22-6w, sd 4084 ft hfw.

HARVEY COUNTY—Gypsy's Shine 1, se sw, 26-22-3w, dr 2913 ft. Gypsy's Hege 1, c se nw se, 13-22-2w, dr 1125 ft.

GREENWOOD COUNTY — Kinsey et al's Bahr 1, se c, 24-22-13e, spd and sd.

RICE COUNTY—Burgher's Fair 1, c se ne ne, 14-21-10w, dr 3740 ft hfw.

McPHERSON COUNTY — Harry Skelly et al's Neufeldt 1, se ne, 19-21-3w, rig.

LINN COUNTY—Ferguson & Hiatt's Carple 1, ne se sw, 22-21-22e, rig.

RICE COUNTY—Miller & Brown's Schwartz 1, c sw nw sw, 10-20-10w, rog. McCulloch's Williams 1, c ne, 35-20-8w, dr 2675 ft.

McPHERSON COUNTY—Millmack's Decker 1, ne c, 11-20-3w, dr 2745 ft hfw.

CHASE COUNTY—Steinbushel et al's Stephenson 1, ne sw, 4-20-6e, dr 1700 ft.

LYON COUNTY—Alladin & Phillip's Ratcliff 1, se c 29-20-10e, dr 2240 ft.

RICE COUNTY — Hoffine, Lee & Shell's Slad Farm Corp. 1, c sw¼, 33-19-6w, rig. Danciger's Bell 1, c sw, 16-19-8w, fshg td 3498 ft.

MARION COUNTY—Marshall et al's Higgens 1, ne c, 33-19-5e, rig.

CHASE COUNTY—Steinbushel et al's Cook 1, se c, 195-27, 31-19-8e, dr 2560 ft. Chase County Gas Co.'s Weirhoff 1, c sw nw, 31-19-6e, mach.

RICE COUNTY—Tatlock et al's Ploog 1, c sw se, 33-18-9w, spd and sd.

CHASE COUNTY—Urschell et al's Lipps 1, c sw sw, 27-18-6e, dr 2040 ft.

SALINE COUNTY—Dixie's Miller 1, c ne se se, 9-16-3w, dr 298 ft.

NESS COUNTY—Clark et al's Vaughn 1, se sw, 28-17-22w, dr 400 ft.

DICKERSON COUNTY—Hiatt & Durham's Wendt 1, nw c, 17-16-2e, spd.

MORRIS COUNTY—Urschell et al's Scott 1, ne sw, 6-16-6e, dr 2115 ft. Hankenson et al's Sessnum 1, sw se, 24-16-9e, rig.

ELLIS COUNTY — Rush Oil Co.'s Gatewood 1, nw, 4-15-20w, td 3290 ft hfw ur 6-in.

RUSSELL COUNTY — Empire-Prairie's Ochs 2, se ne, 23-15-14w, lcn.

DICKERSON COUNTY—Cross et al's Sandon 1, ne c, 12-15-2e, ru and sd.

TREGO COUNTY—Dixie & Amerada's Reitmeyer 1, c ne ne, 19-14-21w, td 4149 ft hfw.

RUSSELL COUNTY—Imo O&G's Wambly 1, 7-14-14w, dr 800 ft.

ELLIS COUNTY—Streeter & Stearns's Leiker 1, sw ne, 26-13-20w, sd 1295 ft.

GROVE COUNTY—Valerius et al's Todd 1, nw c, 24-13-27w, rig.

RUSSELL COUNTY — Austin Drlg. Co.'s Rickfeller 1, se c, 6-13-12w, dr 425 ft.

SALINE COUNTY—Twin Mounds Oil Co.'s Weis 1, c w½ ne nw, 20-13-4w, dr 1000 ft.

DICKERSON COUNTY — Emery-Curtis & Bryan's Hevner 1, c nw se, 31-13-3e, sd 2305 ft. Severs et al's Larringood 1, nw sw, 13-13-2e, spd. Kroeger et al's Dische 1, c nw ne ne, 17-13-4e, hfw sd 2943 ft.

GROVE COUNTY—Day's Guyler 1, c sw ne ne, 36-12-31w, sd and spd.

PAWNEE COUNTY—Central Commercial's Helms 1, se ne, 2-21-20w, dr 1005 ft.

RUSSELL COUNTY — E. H. Morgan's Whitehair 1, nw se, 9-12-13w, sd 1768 ft.

SHAWNEE COUNTY — Jenkins & Scott's Haden 1, ne se, 8-12-14e, dr 1560 ft. Jenkins & Scott's Haden 1, se nw, 10-12-17e, dr 1800 ft.

LEAVENWORTH COUNTY—Forrester et al's Yazel 1, cel se se, 18-12-22e, td 1547 ft hfw.

ELLIS COUNTY—Byrens et al's Fisher 1, nw se, 4-11-20w, sd 1000 ft.

RUSSELL COUNTY—Gilbreath et al's Bartton 1, c ne, 33-11-13w, sd 1010 ft.

SHAWNEE COUNTY — Jenkins & Scott's Sherman 1, nw ne, 28-10-15e, sd 985 ft.

ROOKS COUNTY—Krueger's Steis 1, nw se sw, 12-9-16w, sd 570 ft.

CLAY COUNTY—Chrisler's Tivier 1, se c, 19-8-3e, spd and sd.

SHERIDAN COUNTY — Mandolin's Unknown 1, c se sw sw, 27-7-26w, spd and sd.

RILEY COUNTY—Derby-Skow Bros.'s Landstrom 1, ne, 32-7-5e, sd 2270 ft. Grey et al's Smith 1, ne se, 30-6-6e, sd 1970 ft.

NORTON COUNTY—A. H. Richard's Colby 1, c sw, 17-4-21w, rig.

MARSHALL COUNTY — Swicker & Simcox's Remple 1, c n½ nw, 22-4-9e, dr 1000 ft. Blazier et al's Runkel 1, se nw, 13-2-6e, mach.

NEBRASKA

U. S. Drilling Company's Brunkle 1, c nw sw ne, 2-3n-13w, rig.

Graham Brothers' Edwards 1, nw sw, 13-2n-22w, dr 3250 ft. Southwestern Petroleum Corporation's Montague 1, se sw sw, 28-1n-22w, dr 1750 ft. Mid-States Exploration's Platt 1, c se, 3-1n-11w, dr 555 ft.

CENTRAL EAST TEXAS

Completions

Company, Well and Location	Initial Production Bbls.	Depth
ANDERSON COUNTY—		
Sun Oil Co., Bowers-Maier 1	*	1656
FREESTONE COUNTY—		
Cranfill-Reynolds Co., W. E. Bonner-George 1	*	4000
HENDERSON COUNTY—		
Cranfill-Reynolds Co. et al, J. W. Broom 1	*	4700
RUSK COUNTY—		
Magnolia Pet. Co., Duran-Wylie 1..	*	3295
VAN ZANDT COUNTY—		
Upchurch & Will Thompson, Owlet School 1	*	3073
WOOD COUNTY—		
Westexas Oil & Royalty Corp. et al, Negro Orphanage 1	*	4610

ANDERSON COUNTY — Humble O&R Co.'s J. C. Collier 1, John Little sur, cem cas 1500 ft. Sun Oil Co.'s Bowers-Maier 2, E. G. Meyers sur, set sur cas. Sun-Humble-Navarro Oil Co.'s Allison Gardner 1, M. Salisar sur, set sur cas.

CAMP COUNTY—J. C. Rogers & Southern Pet. Explo. Co.'s L. Enfelt 1, R. M. Montgomery sur, elev 410 ft, Pecan Gap chalk 2490 to 2907 ft, sd 3045 ft.

DELTA COUNTY — Geo. Kean & J. B. Evans' C. Smith 1, J. B. Anderson sur, elev 506 ft, dr 2110 ft.

ELLIS COUNTY—G. C. Foster & S. C. Richardson's Mois-Cerf 1, LaPena sur, elev 440 ft, Austin chalk 531 to 814 ft, dr 1935 ft.

FANNIN COUNTY—Ed. V. Parsons et al's Morgan 1, J. E. English sur, elev 668 ft, dr 2650 ft.

FRANKLIN COUNTY — Harper & Byers' A. J. Laws 1, D. G. Rogers sur, rig.

FREESTONE COUNTY—Haley & Young's Pierce-Worthy 1, J. L. Chavert sur, elev 481 ft, sp and sd. O. K. Killam et al's R. H. Edwards 1, A. Sanchez sur, elev 402 ft, dr 2010 ft. C. F. Lytle et al's Holt 1, D. Avant sur,

elev 469 ft, top Austin chalk 3906 ft, ream hole from 4620 to 4930 ft to test show gas in salt water.

HENDERSON COUNTY—H. B. Ashburn et al's T. E. Terry 1, Arron York sur, sd 1870 ft. E. L. Chapman et al's Cade 1, Simon Weiss sur, dr 3010 ft. Cranfill & Germany, Inc.'s, Clara C. Starr 1, G. Acosta sur, lcn. Shell Pet. Corp.'s S. T. Stephens 1, I. D. Owen sur, elev 510 ft, Pecan chalk 2050 to 2129 ft, Austin chalk 2916 to 3115 ft, top Woodbine series 3164 ft, fsh in broken shale 3691 ft. Geo. L. Pace et al's Sarah Anthony 1, J. M. Bettram sur, dk.

HOPKINS COUNTY—Lew Wentz & Atlantic Oil Prod. Co.'s S. M. Milholland 1, J. H. Simpson sur, elev 525 ft. Woodbine sand at 3247 ft, sd 3501 ft.

KAUFMAN COUNTY—Roy H. Sowell et al's A. H. Ables 1, E. Ables sur, dr 425 ft.

LAMAR COUNTY—B. L. Laubenheim et al's Johnson 1, Wm. Driggers sur, elev 667 ft, fsh 3090 ft.

LIMESTONE COUNTY — Haley-Heeman's Wilkes 1, J. Breeding sur, elev 421 ft, sd 1075 ft.

MORRIS COUNTY—Geo. McCamey et al's P. M. Staggers 1, G. Forbes sur, spd and sd.

RAINS COUNTY—D. H. Byrd & Owen-Sloan Oil Co.'s J. D. Hill 1, F. McMahan sur, dr 1960 ft. E. Morrison et al's J. Franklin 1, John Christian sur, dk blown down.

RED RIVER COUNTY—E. L. Chapman et al's Morris-Guest 1, S. Lakin sur, dr 560 ft.

RUSK COUNTY — E. M. Joiner et al's Bradford 3, elev 390 ft, Pecan chalk 2590 to 2774 ft, dr 3090 ft.

SMITH COUNTY — Dan Daniels-Adair & T. B. Slick's A. J. Poirier 1, David Wilson sur, elev 375 ft, dr 2600 ft. E. L. Chapman & Sutton's J. M. Hammon 1, Jas. Reid sur, elev 380 ft, Pecan chalk 2680-2912 ft, dr 3545 ft. Owen-Sloan Oil Co. & R. H. Davis' J. H. Starnes 1, J. W. Allen sur, elev 417 ft, sd 1353 ft. O. M. Rector et al's M. Dozier 1, M. Maise sur, lcn. Winona Oil Co.'s Morgan Freeman 1, A. J. LaGrone sur, spd and sd.

TITUS COUNTY—Deep Rock Oil Co. et al's First Nat'l Bank Fee 1, H. W. Cobb sur, rig. Wainright-West Oils, Ltd.,s Walcott-Lott 1, D. M. Smith sur, elev 280 ft, top Pecan 2600 or 2365 ft, dr 3575 ft.

VAN ZANDT COUNTY—Doc Cooper et al's Elliott 1, W. H. Bundy sur, dk blown down. Cranfill-Reynolds Co.'s C. M. Alexander 1, J. Burleson sur, Pecan chalk 2695 to 2814 ft, dr 3405 ft, but will plug back and test Nacatosh sand. Warren T. Daniel et al's F. Cumby 1, John Wright sur, elev 457 rt, dr 2100 ft. Dennis Oil Corp.'s C. W. Morris 1, C. L. Morrison sur, elev 490 ft, coring 2700 ft. Grand Saline Oil Co.'s W. J. Carnes 1, S. P. Ry. sur, sd 1150 ft. Manley-Sprinkle-Evans' B. C. Andrews 1, M. Neal sur, elev 536 ft, sd 3005 ft. Harrt Pet. Co.'s L. H. Cox 1, A. C. Nugent sur, dk; B. F. Womble 1, P. Young sur, dk. Pandem Oil Corp.'s R. L. Brinn-Gibbard 1, Ray Sunigas sur, elev 391 ft, Pecan chalk 2850 to 2979 ft, sd 3045 ft. L. G. Priest et al's Blanche Blewett 1, E. Porter sur, rig. Texas Chief Oil & Roy. Co.'s J. P. Foster 1, F. Montgomery sur, sp and sd. Vanco Oil Corp.'s Wages 1, rig. Van Zandt Oil & Dev. Co.'s Sharp-Robinson 1, J. B. Ybarbo sur, elev 372 ft, Pecan chalk 2764 ft, dr 3680 ft.

WOOD COUNTY—Big Indian Oil & Dev. Co. & Tidal Oil Co.'s R. J. King 1, Wm. Barnhill sur, elev 480 ft, top Pecan chalk 2636 ft, dr chalk 2820 ft. Geo. L. Pace et al's B. G. Dickey 1, J. C. Clark sur, elev 458 ft, sd 2060 ft.

NORTHERN CALIFORNIA

Company, Well and Location	Initial Production Bbls.	Depth
SAN LUIS OBISPO COUNTY—		
Midwest Refining Co.'s Hately 1, 34-31-15	*	4390

KERN COUNTY

BELRIDGE—J. H. Kennedy's No. 1, 5-29-21, dr gray sand 1738 ft. Rio Grande's Garcia 1, 18-28-22, re-dr 3100 ft. K. C. Wallace's No. 1, 32-29-21, dr shale 2928 ft.

BUTTONWILLOW—General Pet.'s Morris 1, 6-28-23, shut in, td 2706 ft. Milham Exploration's Kern 6, 8-28-23, M on csg 4945 ft.

EDISON—F. M. Sayre's No. 1, 5-30-29, co 4220 ft. Shell's No. 2-1, 33-29-29, dr hard sand and shale 4050 ft.

GOULD HILLS—Casa Mira Oil Co.'s Theta 1, 20-28-20, fsh for dr pipe 3340 ft.

LERDO—Shell's Lee 1, 23-28-26, dr shale and sand 575 ft.

McKITTRICK—Ohio's M. M. 1, 32-20-22, dr shale 5220 ft.

PATTIWAY—H. A. Bardeen's Klipstein 1, 18-10-23, dr hard sand 915 ft; Ramsey 1, 10-10-23, dr hard shale 1655 ft.

MIDWAY—Union's Reeves 1, 27-32-23, dr shale 2750 ft.

ROUND MOUNTAIN—Gerrard & Phillips' No. 1, 32-27-29, fsh 1640 ft.

SEMITROPIC—Shell's Williams 1, 17-27-23, rigging up.

SHALE HILLS—Girard Oil Co.'s Watkins 1, 28-26-18, dr shale 906 ft.

TEMBLOR HILLS—Shell's Gonyer 1, 32-32-23, dr shale 3505 ft.

WEED PATCH—Shell's Porter Day 1, 29-30-29, dr hard sand 3788 ft.

SANTA BARBARA COUNTY

CAMPBELL'S POINT — Bolsa Chica Oil Corp.'s Augur 191-1, 24-4-9, lcn.

CARPENTERIA—Continental's Bailard 124-1, showing gas, td 3965 ft. George F. Getty's McDonald 120-1a, cmt 6⅝-inch cas 1025 ft.

CASITAS PASS—Standard's Shepard 1, 26-4-25, dr shale 2355 ft.

EL TORO—Shell's Fithian 1, 18-4-25, dr shale 2890 ft.

GATO RIDGE—Barnsdall Oil Co., Teg. 1, 9-8-32, dr shale 818 ft.

GOLETA—Carrey and Adams' No. 1, 1-4-28, will deepen from 2840 ft. General Pet.'s Permit 138-1, dr shale 3800 ft; More 2, m on iron 4333 ft.

LOMPOC — Ohio's Hollister 1, 2-6-34, dr hard sand 4635 ft. Prairie Oil & Gas' Shyvers 1, 11-7-35, dr hard sand 2506 ft.

ORELLA—General Pet.'s Erburu 4, flowing heavy oil, td 1385 ft.

POINT CONCEPCION—Standard's Gerber 1, dr shale 4487 ft. Universal Consolidated's Concepcio 1, 30-5-34, dr gray sand 2000 ft.

PURISIMA—Vaqueros Major Oil Co.'s Arnold 1, 5-7-33, dr 100 ft.

SANTA MARIA—O. C. Field's Norswing 1, 8-9-33, dr hard shale 2878 ft.

SANTA YNEZ—Deuell & Cole's Brinkinhoff 1, 9-7-30, dr 250 ft.

VENTURA COUNTY

CAMARILLO—Calleguas Oil Synd.'s Leonard 1, 6-1-20, testing showings at 885 ft. Camarillo Oil Synd.'s Rancho Calleguas 1, dr 315 ft.

FILLMORE—General Pet.'s Burson 1, 6-3-19, dr shale 1370 ft. Oil Search Corp.'s McNabb 1, 29-4-19, rig.

HOPPER CANYON—E. A. Fennell's Lankershim 1, 13-4-19, dr gray sand 1585 ft. George H. Hadley's No. 1, 13-4-9, 12¼-inch cas cmt 760 ft.

PIRU—Bolsa Chica Oil Corp.'s Snow 1-A, 4-4-18, dr shale 2238 ft.

RINCON—Associated's Snowball 1, 19-4-24, dr hard sand 1800 ft.

SANTA MONICA MOUNTAINS—Olympic Corp.'s Calabasas 1, 18-1-17, dr shale 3935 ft.

SANTA PAULA CANYON—Leonard Jones' No. 1, 15-4-21, lcn. Canyon Oil Co.'s Anlauf 3, dr gray sand 1238 ft. Empire Oil Co.'s Steen 4, 13-4-21, dr shale 3318 ft.

SATICOY—Standard's Citrus 5, 10-2-22, fsh for dr pipe 8530 ft.

SIMI—Richfield's Tapo 1, bailing 2365 ft.

SOMIS—Shell's Everett 1, lcn.

VENTURA—Prairie Oil & Gas' Sexton 1, 30-3-22, 13⅜-inch cas cmt 4287 ft.

MISCELLANEOUS

FRESNO COUNTY — Fresno-Madera Oil Co.'s No. 1, 18-12-12, dr shale 4328 ft. Rio Grande's Edison 1, 35-13-16, dr shale 4275 ft. Currency Pet. Co.'s No. 1, 28-21-14, co 3610 ft. John Knudsen's No. 1, 14-21-14, dr shale 1707 ft. Richfield's Schrock 1, 33-22-16, rigging up. Western Gulf's Welsh 1, 26-15-12.

KINGS COUNTY—Wellport Oil Co.'s No. 1, 9-24-17, fsh for dr pipe 3628 ft. J. E. O'Donnell's No. 1, 7-23-20, dr shale 4318 ft.

MENDOCINO COUNTY—Twin State Oil Co.'s Soldani 1, 14-12-17, dr 3266 ft.

MONTEREY COUNTY — Standard's Piedmont 1, 23-22-7, dr gray sand 4350 ft. Union's Paige 1, 8-22-8, dr shale 3222 ft.

STANISLAUS COUNTY — Barnhart Oil Trust's Gilbert 1, 3-2-10, dr shale 3300 ft.

SAN LUIS OBISPO COUNTY—Panorama Oil Co.'s Panorama 1, 7-31-21, fsh for 6¼-inch cas, td 4010 ft. Paso Robles Synd.'s Emerick 1, 34-27-15, dr hard sand 3890 ft. Libby Pet. Co.'s Upton 1, 31-27-15, dr hard gray sand 4478 ft. Pismo Dome Oil Co.'s Pricco 2A, 5-31-13, dr shale 2319 ft. Texas Pacific Coal & Oil Co.'s No. 1, 25-32-14, pulling 5 3/16-inch cas, td 4000 ft.

SOUTHERN CALIFORNIA

GARDENA—Ohio's Fish 1, dr shale and hard sand 4255 ft.

HERMOSA BEACH — California Ventura Oil Co.'s Holston 1, rig.

HUNTINGTON BEACH — Vaqueros-Major Oil Co.'s Permit 194-1, dr 200 ft.

LA HABRA—R. C. Rucker's Grazide 1, fsh for dr pipe 3670 ft; Union's Sansimena 11, co 3075 ft, will deepen.

NEWHALL—Consolidated Oil Co.'s Hammond 1, dr shale 1600 ft.

NEWPORT—H. L. Hall's No. 1, running 10-inch cas to 700 ft. Standard's Sickler 1, lcn.

POMONA—Grimes-Girrard Oil Synd.'s No. 1, fsh for iron 1455 ft.

PUENTE—Western Gulf's Diamond Bar 1, dr shale 4155 ft.

RICHFIELD—Weber and O'Brien's Brown 1, sd 5350 ft.

SAN FERNANDO—Shell's Andrews 1-1, dr hard sand 2300 ft.

SOUTH LOS ANGELES—William Diller's No. 1, dr gray sand 5835 ft.

TELEGRAPH CANYON—Union's Rimpau 1, dr hard sand 4400 ft.

WHITTIER—Tureco Oil Co.'s Cole 1, dr shale 800 ft. Union's Orchardale 1-A, lcn.

YORBA LINDA—L. C. Simmel's Todd 1, dr 150 ft.

RIVERSIDE COUNTY—Hemet Pet. Co.'s Ward 1, sd 3555 ft. Trabuca Oil Co.'s No. 1, dr hard shale 4400 ft.

SAN BERNARDINO COUNTY — Marcell Pet. Co.'s Marcell 1, dr shell 1777 ft.

ALABAMA

HOUSTON COUNTY — J. R. Sealey's Fee 1, 13-1n-27e, changing from cable tools to rotary, td 3100 ft.

LAUDERDALE COUNTY — P. J. McAlpine's O'Neal Hrs. 1, 8-2s-13w, dr hard gray limestone 1385 ft.

MORGAN COUNTY—Albany-Decatur O&G Co.'s English 1, 6-6-4, fsh for cas, td 4130 ft.

SUMTER COUNTY—B. W. Bates' Fee 1, 3-18-1w, TA 1200 ft; Fee 2, 3-18-1w, rigged up wo.

WASHINGTON COUNTY—Hobson et al's Wilson 1, 27-7-1w, arr resume dr in limey shale 881 ft; Hobson Bros. 1, 9-8-2w, sd 1450 ft. Oscar Brown's U. S. Land & Cotton 2, 25-3-2, last report dr 720 ft.

TENNESSEE

DECATUR COUNTY—Chester County O&G Co.'s Montgomery 1, set 6-inch cas 1045 ft, dr hard lime 1855 ft.

ARKANSAS

Company, Well and Location	Initial Production Bbls.	Depth
SEBASTIAN COUNTY—		
Lavaca O&G Co., Braley 7, 28-8-30	¶4½	2977

CALHOUN COUNTY—Tidal Oil Co.'s Ark. Timber Co. 1, 3-16-14, move in rig.

COLUMBIA COUNTY — L. E. Parker's Franks 1, 25-19-22, sd 2831 ft.

CLEVELAND COUNTY — Donnell et al's Fee 1, 33-11-9w, dr 775 ft.

CLEBURNE COUNTY — Cosden Oil Co.'s Donithan Lbr. Co. 1, 19-9-10, set 10-inch cas 2485 ft, dr hard rock 3030 ft.

DREW COUNTY—McClintock & Goedke's Ogle 1, 33-13-5, set 6-inch cas 1800 ft, arr resume dr 2625 ft.

FAULKNER COUNTY—Gold Creek O&G Co.'s Stermer 1, 17-4-13, TA 3872 ft; Stermer 2, 17-4-13, rigged up wo.

FRANKLIN COUNTY — Ozark Nat. Gas Corp.'s McElroy 1, 15-8-27, arr plug back, td 3100 ft. Red Bank Oil Co.'s Edtin 1, 33-10-26, dr 508 ft.

GARLAND COUNTY—H. H. Given's Garrett 1, 1-13-19w, dr hard lime 3485 ft.

GRANT COUNTY—Jones & Watkins' Meek 1, 5-4-11, TA 1400 ft.

JOHNSON COUNTY—Ark. La. Pipe Line Co.'s Cline 1, 16-10-24, dr 245 ft. Blackwell O&G Co.'s Wyver 1, 21-8-23, jarring out 6-

inch cas at 2100 ft, td 5600 ft. Western Coal & Mining Co. 1, 20-9-25, rig up.

LOGAN COUNTY—M. W. Greesom's Perk 1, 2-8-24, sd 1309 ft. J. H. Flowers' White 1, 13-6-26w, ur 5 3/16-inch cas at 3510 ft, td 3600 ft.

LAWRENCE COUNTY — Marguerite Dev. Co.'s Broadway 1, 31-17-1, sd 45 ft.

LITTLE RIVER COUNTY—Grote et al's Allen 1, 31-12-31, TA 2941 ft. C. F. McDonald's Black 1, 12-13-28, sd wo 2180 ft. Buck Oil Co.'s Taafe 1, 23-12-32, coring lime 2376 ft.

NEVADA COUNTY — Roy Davis et al's Henry et al 1, 10-12-20, rigged up wo.

OUACHITA COUNTY — Anderson et al's Buck 1, 7-15-17, hole cleaned blocking acreage, td 2727 ft. Magnolia Pet. Co.'s Grayson 2, 21-15-19, set 8⅝-inch cas 1478 ft, set 5¾-inch cas 2118 ft, 100 ft fluid in hole, fsh for liner, td 2175 ft.

PIKE COUNTY—Theo. Davis, Tr.'s, Ruth Wilson 1, 25-5s-26w, sd 718 ft.

POPE COUNTY — Cosden Oil Co.'s Mo. Pac. R. R. 1, 13-9-19w, set 8¼-inch cas 3812 ft, dr 3863 ft. Ark. La. Pipe Line Co.'s Crotts 1, 16-9-21w, set 7-inch cas 1256 ft.

SEBASTIAN COUNTY—M. W. Greesom's Spears 1, 9-7-29w, dk. Lavaca O&G Co.'s Cason 3, 21-8-30, dk; Braley 7, 28-8-30, set 3-inch on packer 2997 ft, making 4½ mil ft gas 2805 ft, old td 2997 ft; Southland 1, 28-8-30, dr 2135 ft; J. O. Ingram 7, 22-8-30, dk; Cason 9, 21-8-30, lcn. A. G. Williams, Jr.'s, Patterson 1, 27-8-30, lcn.

SCOTT COUNTY — Heavener O&G Co.'s Reser 1, 36-4-26w, fsh for tools, td 1420 ft.

ST. FRANCIS COUNTY — Brownlee Oil Co.'s Whitted 1, 28-4-1, dr 2307 ft.

UNION COUNTY—H. L. Hunt's Pratt 6, 7-18-15, fsh for liner, td 2214 ft. Malloy & Co.'s Robertson 3, 6-18-15, lcn; Goodwin 4, 36-17-16, set 6⅝ cas 2186 ft, 37 ft bro sand, sand pumping, td 2226 ft; Murphy 1, 1-18-16, rig up. Wisinger & Ball's Rodgers 1, 31-17-15, set 6⅝ cas 2170 ft, pumping wo gauge, td 2221 ft. S. B. Hickman et al's Hogg 1, 35-16-17, set 10-inch cas 100 ft. Southern Crude Oil Purch. Co.'s Oliver 1, 11-18-13, dr 1110 ft. Lion O. R. Co.'s Ballard 1, 10-18-13, coring hard red beds 4284 ft. J. W. Olvey's G. G. Simmons 1, 15-18-13, dr hard lime 3232 ft. Federal Pet. Co.'s Tillman 1, 9-18-13, lcn. Marine Oil Co.'s Winn Est. B-3, 10-18-13, rig up. Simms Oil Co.'s Simmons A-2, 10-18-13, lcn; Simmons B-1, 10-18-13, setting 8¼-inch cas 3527 ft, 1 ft sand, td 3527 ft. South El Dorado Oil Co.'s R. Traylor 1, 9-19-15, sp, dr 50 ft. Modisette Drilling Co.'s Union Sawmill 4, 14-18-14, lcn. Carter et al's Burnside 1, 23-18-14, rig up. Ark. Fuel Oil Co.'s Burns 1, 14-18-17, rig up. O. W. Estes' Telford 1, 35-17-15, old well being deepened, coring 2786 ft, old td 2674 ft. H. L. Hunt's Trammell 1, 28-18-12, sp dr 50 ft. Root Ref. Co.'s Jerry 2, 21-17-14, dk. Sunby et al's Perdue 2, 23-16-14, rigged up wo.

WASHINGTON COUNTY—Taylor et al's Runny 1, 1-13-29w, dk. Lincoln Lease Holding Co.'s Townsite 1, 30-15-32, sd 1500 ft. C. H. Willoughby's Jones 1, 34-16-30, sd 2150 ft. O'Hara & Shetterley's Boyd 1, 12-16-32, TA 850 ft. Delbert Graves' Cunningham 1, 14-15-32, sd in gray sand 692 ft.

WHITE COUNTY—Letona Synd.'s Letona 1, 35-9-8, set 5 3/16-inch cas 3500 ft, sd 3650 ft.

VAN BUREN COUNTY — J. S. Martin's Scanland 1, 5-9-13, sd 50 ft.

YELL COUNTY — T. Luckett's Balcon 1, 36-7n-21w, dr plug cement failed hold, arr reset 6⅝ cas 3637 ft, td 3710 ft.

MISSISSIPPI

ALCORN COUNTY — Alcorn Pet. Co.'s Matthews 1, 14-2-7, jarring out 6-in cas to run 5 3/16-in cas at 2393 ft td 2735 ft.

CHICKASAW COUNTY—Hightower & Golsan's Fleming 1, 20-13-3w, fsh for tools hung while driving 8¼-in pipe td 1414 ft. Fleming 2, 15-13-2w, dk pat.

HINDS COUNTY, (Jackson Dist.) — Mrs. Ella Rawls Reeder's State Land 1, 25-6-1e, wo with some ds still in hole td 2905 ft. Jackson O&G Co.'s Mayes 1, 2-5-1e, supplying gas to nearby test thru separator td 2585 ft. Taylor 1, 35-6-1e, ds recovered cored snd show oil 2910 ft arr set 6⅝-in cas 2880 ft td 2910 ft. Central Cotton Oil Co., 1, 3-5-1e, dk. Louisiana G&F Co.'s Harris 1, 35-6-1e, set 8⅝-in cas 2506 ft sd in chalk repr boiler td 2780 ft. Love O&G Co.'s Bridges-Hilzim 1, 35-6-1e, sp wo. Interior O&G Co.'s Mayes 1, 2-5-1e, dk (formerly Progressive O&G Co.'s test.) Tri-State O&G Co.'s E. S. Wilson 1, 23-6-1e, dk up wo tools. Dome O&G Co.'s Elton 1, 5-4-1e, set 9-in cas 815 ft to test sand td 824 ft. Magnolia State Oil Co.'s Brown 1, 19-6-1e, dk. Weir et al's Holliday & Ross 1, 8-6-2e, dk up wo rig. Cane River O&G Co.'s Lufkin 1, 15-5-1e, dk.

KEMPER COUNTY, (DeKalb Dist.)—W. W. Jones' Rosenbaum 1, lcn not given, dk.

LA FAYETTE COUNTY—F. E. West et al's May 1, 22-10-1w, rigged up wo.

LAUDERDALE COUNTY, (Meridian Dist.) —Lauderdale O&G Co.'s Lackey 1, 2-7-16, set 8¼-in cas 2790 ft, tested 4 fourbles dr mud thru ds 3086 ft, coring shale 3100 ft. Meridian Nat. Gas Co.'s Mattie Houser 1, 33-8-18, sd in sandy shale 2826 ft.

MONROE COUNTY, (Amory Dist.)—Amory Pet. Co.'s Hall 1, 8-13-17, shot formation 2385-2402 ft with 75 sticks dynamite co to 2250 ft td old hole 3045 ft. Amory Dev. Co.'s Bourland 1, 2-13-19, sd in lime bailer in hole td 2912 ft. Park Bowser's Cowart 1, 2-12-19, wo with pipe driven to 85 ft.

RANKIN COUNTY, (Jackson District) — Gulf Ref. Co.'s Rainey 1, 13-5-1e, coring chalk 2847 ft. Interior Oil Co.'s Moore 1, 28-6-2e, resumed dr after sd at 900 ft. Pearl River O&G Co.'s Littlefield 1, 12-5-1e, dk.

WARREN COUNTY (Vicksburg Dist.)— Henderson et al's Dornbusch 1, 8-18-15, sd wo with ds stuck in hole, td 2475 ft.

WEBSTER COUNTY — Cumberland Oil Co.'s Henley 1, 15-21-11, TA 1865 ft.

YALABOUSHA COUNTY (Water Valley Dist.)—J. D. Collette et al's Blackmer 1, 14-11-4w, topped red beds 2316 ft, plugged back to 2280 ft to straighten crooked hole, arr to r to 2300 ft to set 8¼-inch cas, td 2434 ft.

NORTH LOUISIANA

Company, Well and Location	Initial Production Bbls.	Depth
BOSSIER PARISH (Cartersville)—		
Arkansas Fuel Oil Co., Barnett B-1, 36-23-12	190	3161
Bolinger 3, 38-23-11	*	3497
Bolinger 4, 38-23-11	*	3270
Kilgore B-5, 31-23-11	200	3165
Phillips Pet. Co., Bolin 1, 38-23-11	*	3194
Texas Co., Wilkinson 6, 36-23-12	250	3168
DE SOTO PARISH (Holly)—		
Arkansas Fuel Oil Co., C. B. Scott 1, 32-14-13	*	3175
SABINE PARISH (Zwolle)—		
Loring Oil Co. (Benedum & Trees), Bowman-Hicks 2, 3-7-12	75	2725
R. L. Burch, Barnett 1, 31-8-12	35	2458

BIENVILLE PARISH — W. A. Nichols' McDermott 1, 28-18-6w, sd 2130 ft.

BOSSIER PARISH—Ark. Fuel Oil Co.'s Bolinger 3, 38-23-11, sw sand 3487-89 ft, sw abn, td 3497 ft; Bolinger 4, 38-23-11, set 6⅝ cas 3262 ft, plugged back to 3265 ft, sw abn, td 3270 ft; Barnett 1, 25-23-12, set 6⅝ cas 3135 ft, 750 ft oil in hole, 12 ft sand wosr, td 3159 ft; Barnett B-1, 36-23-12, set 6⅝ cas 3140 ft, flowing 190 bbls daily through 2-inch tub, td 3161 ft; Barnett B-2, 26-23-12, rig up; Marks Meyer 1, 36-23-12, rig up to deepen, td 3088 ft; Floyd 1, 25-23-12, set 6⅝ cas 3135 ft, wosr, td 3176 ft; Peyton 3, 30-23-11, TA 3285 ft; Peyton 4, 30-23-11, set 6⅝-inch cas 3131 ft, td 3161 ft; Kilgore A-3, 30-23-11, set 6⅝-inch cas 3112 ft, td 3135 ft; Kilgore A-4, 30-23-11, set 6⅝ cas 3109 ft, td 3133 ft; Kilgore B-4, 31-23-11, reset 6⅝ cas 3175 ft; Kilgore B-5, 31-23-11, set 6⅝ cas 3130 ft, flowing 200 bbls day, td 3165 ft; Kilgore B-6, 31-23-11, set 10-inch cas; Kilgore B-7, 31-23-11, rig up; Kilgore B-8, 31-23-11, dk; Kilgore B-9, 31-23-11, lcn; Ramsey 1, 31-23-11, dr 1400 ft. Air Lift Oil Co.'s & Bahan & Bahan's Pleasant 1, 23-23-12, sd wo 3215 ft. Askew & Goodman's Roberson 1, 25-23-12, show oil and gas, sd 3280 ft. Deleware La. Dev. Co.'s Bolinger 3, 38-23-11, old well arr deepen; Bolinger 6, 38-23-11, hfo 15 ft bro sand, td 3217 ft. Lide et al's Matlock 1, 26-23-12, sp dr 2050 ft. Natural Gas Prod. Co.'s U. S. 3, 31-23-11, lcn; U. S. 4, 31-23-11, lcn. Greenwood Prod. Co.'s Bolinger 1, 36-23-12, sd wo 3290 ft. H. L. Hunt's Allen 1, 30-23-11, wo 3482 ft; Peyton 5, 25-23-12, lcn; Peyton 7, 25-23-12, lcn; Peyton 8, 25-23-12, rig up; Peyton 9, 25-23-12, set 6⅝ cas 3178 ft, topped sand 3178 ft, 100 ft oil in hole, wosr, td 3222 ft; Peyton 10, 25-23-12, topped sand 3156 ft, set 6⅝ cas 3156 ft, 500 ft fluid in hole 50 per cent sw, td 3176 ft. Woodley et al's L.&A. 2, 14-23-12, 4 ft sand set 4½-inch cas 3133 ft, fsh for bailer, td 3156 ft; Roberson 1, 22-23-12, surf cas collapsed, td 1500 ft. Andrews & Devlin's Nattin 1, 15-22-14, dr 760 ft. Walker et al's Antrim 1, 28-21-13, sd 3184 ft. La. G&F Co.'s Crystal O&G Co. 1, 7-21-11, set 12½-inch cas 414 ft. C. H. French's Biedenharn 1, 23-21-14, set 6-inch cas 912 ft, 2 ft sand showing oil, td 1004 ft. H. I. Morgan et al's Waetherbee 4, 21-19-11, tested sw through ds 1920-30 ft, arr core. Magnolia Pet. Co.'s Matlock 2, 25-23-12, set 8⅝-inch cas 3147 ft bailing to test, td 3188 ft; Matlock 3, 25-23-12, dr 2904 ft; Roberson 1, 26-23-12, set 5¾-inch cas 3137 ft, tested dry through ds 3331 ft, plugged back to 2950 ft. La. Pet. Co.'s H. H. Bain 3, 31-23-11, arr set 6-inch cas 3130 ft, td 3271 ft. Texas Co.'s Peyton 1, 31-23-11, old well arr deepen, td 3070 ft; Peyton 2, 25-23-12, set 6-inch cas 3135 ft, wosr, td 3140 ft; Peyton 5, 23-23-12, dk; Wilkinson 6, 36-23-12, set 6-inch cas 3140 ft sand 3144-5¢ ft, flowing 250 bbls oil day, td 3168 ft; Wilkinson 7, 36-23-12, sp set 10-inch cas 371 ft, dr 1790 ft; Wilkinson 8, 36-23-12, rig up; Henry Rose 1, 31-23-11, old well rig up to deepen; Olsan Bros. et al's Pine Woods Lbr. Co. 1, 25-23-12, lcn. Phillips Pet. Co.'s Floyd 1, 25-23-12, lcn abn will not drill; Bolinger 1, 38-23-11, dk; Bolin 1, 38-23-11, dry abn, td 3194 ft (old well deepened from 3091 ft). Tippett et al's Holmes 2, 36-23-12, set 6⅝ cas 3140 ft, 3 ft sand 3153-56 ft, td 3156 ft. E. W. Bateman's Bolinger 1, 38-23-11, cored hard sand and sandy shale 3095-31-4 ft, wo to set cas; Bolinger 2, 38-23-11, lcn. Eylers O&G Co.'s Wise 1, 35-23-12, set 6-inch cas 3127 ft, 350 ft oil in hole, wost td 3203 ft.

CADDO PARISH—Triangle Drilling Co.'s Hardy 1, 18-19-16, set 8-inch cas 1726 ft, set 6-inch cas 2090 ft, claim oil show, td 2100 ft. C. W. Robinson's Wilson 1, 2-15-16, sd wo 3090 ft. I. N. Pharris' Oden 1, 19-19-14, set 6⅝ cas 2379 ft, td 2409 ft. D. C. R. Oil Co.'s Oden 1, 18-19-14, dr 1470 ft. R. W. Norton's Hill 1, 33-23-16, dr lime rock 4727 ft. Magnolia Pet. Co.'s Swann & Davis 1, 16-21-14, set 6⅝ cas 1535 ft, tested dry 1580 ft, dr chalk rock 1624 ft. L. B. Mawk's Swann Bros. 1, 23-21-14, sd for fuel 700 ft.

CATAHOULA PARISH — National O&G Co.'s Kirkland 1, 35-9-6e, rig up.

CLAIBORNE PARISH — Triangle Drilling Co.'s Caskey 2, 6-19-5w, sp dr 75 ft. El Dorado Chief Oil Co.'s Simmons 1, 27-20-7w, sd in bldrs and shale 2240 ft. Leue Oil Co.'s Taylor 1, 16-22-6w, sd wo 2864 ft.

CONCORDIA PARISH—Joe Marr et al's Maxwell 1, 33-3-8e, dr sandy shale 2790 ft. A. C. Glassell's Pittsfield Plantation 1, 41-8-10e, sp set 10-inch cas 100 ft, dr 250 ft.

DE SOTO PARISH — Benson O&G Co.'s Harris 1, 6-10-13, set 6⅝-inch cas 3070 ft, sd wo 3650 ft. R. O. Roy's Farmer B-1, 8-13-13, dr 200 ft; Lee 1, 33-14-13, topped Nacatosh 1, 1235 ft, dr 2400 ft; R. A. Nelson 1, 36-15-13, rig up; Parker Bros. 1, dr 1750 ft; Whittaker A-1, 5-13-13, dr 2000 ft; Brooks 1, 8-13-13, bldg dk; Fuller & Canard 1, 6-13-13, lcn; McGee 1, 8-13-13, lcn; Tracy 2, 5-13-13, dk. H. L. Hunt's Furman 1, 5-14-13, rig up. O'Dell & Lawton's Harris 1, 11-13-14, old well being co, ds stuck 700 ft down, td 3140 ft. Ark. Fuel Oil Co.'s C. B. Scott 1, 32-14-13, sw abn, td 3175 ft; C. B. Scott 2, 32-14-13, rig up. R. O. Roy's Mattie Fuller 1, 5-13-13, rig up. Frank Melat, Inc.'s, Schryver 1, 35-14-13, sp dr 75 ft.

FRANKLIN PARISH—Evansville Inv. Co.'s Welsh 1, 2-14-8e, sd 4200 ft. Davis et al's Moore 1, 12-11-6e, sd 1430 ft.

JACKSON PARISH—El Dorado Chief Oil Co.'s Southern Adv. Paper Co. 1, 35-15-4w, dk.

NATCHITOCHES PARISH — S. D. McDaniels' Clark-Morse 1, 23-5-6w, sd 2436 ft. Robeline O&G Co.'s Winn 1, 7-8-9w, sd in rock 1635 ft. W. M. Coates' Collins 1, 28-9-10, sp set 12½-inch cas 150 ft.

RAPIDES PARISH—Ayers Bros.' Wicklipp 1, 9-5n-2w, sd 2650 ft.

RED RIVER PARISH — W. D. Ball's Krumbholz 1, 32-14-10, set 6⅝ cas 1680 ft, tested sw, sd 1701 ft.

RICHLAND PARISH—Austin & McDonald's Millsaps 2, 17-17-6e, sd 2697 ft; Millsaps 3, 16-17-6e, sd 2477 ft; Millsaps 4, 16-17-6e, lcn;

Millsaps 5, 8-17-6e, dk; Hunt 1, 13-17-5e, dk. W. C. Feazel's Landrum 1, 6-16-7e, dk. International Gas Prod. Co.'s La Grone 1, 7-16-7e, lcn.

SABINE PARISH—McDaniels et al's Batson 1, 16-8-12, dr 1645 ft. Benedum & Trees (Loring Oil Co.'s), Bowman-Hicks 2 (formerly A-2) 3-7-12, set 8¼-inch cas 2390 ft, pumping 75 bbls oil day, td 2725 ft; Bowman-Hicks 4, 34-8-12, dr 1225 ft; Bowman-Hicks 5, 34-8-12, hit base chalk 2825 ft, cored sandy shale showing oil 3200-3205 ft wo; Bowman-Hicks 7, 4-7-12, wosr td 2700 ft; Bowman-Hicks 8, 18-7-13, dk; Bowman-Hicks 9, 34-8-12, sp set 10-inch cas 104 ft, dr 1100 ft; Peavy-Wilson 1, 21-6-13, cored 3 ft sand showing oil 1147-50 ft arr deepen. R. L. Gay, Tr.'s, Bowman-Hicks 7, 14-7-14, set 6-inch cas 2090 ft, hfo making heads, wosr, td 2575 ft; Bowman-Hicks 8, 18-7-13, set 10-inch 61 ft, dr 725 ft; Sabine Lbr. Co 4, 13-7-14, ds recovered, dr 2500 ft. A. H. Tarver et al's Sabine State Bank 2, 26-8-12, sp set 10-inch cas 102 ft. Olsan Bros.' Hooker 1, 27-8-12, topped chalk 2357 ft, set 6⅝ cas 2333 ft, flowing est 50 bbls by heads into tanks, td 2625 ft; Ferguson 1, 33-8-12, dk. Ohio Oil Co.'s Bowman-Hicks 3, 33-8-12, set 6⅝ cas 2400 ft, wo 2680 ft; Bowman-Hicks 1, Acct. 2, 6-7-13, topped marl 2062 ft, set 6-inch cas 2070 ft, td 2260 ft; Bowman-Hicks 5, 33-8-12, lcn. W. G. Gray's Nulton 1, 6-7-12, set 6⅝ cas 2197 ft, topped Blossom 2823 ft, cored 8 ft chalk showing light oil 3657-65 ft, set 4½-inch cas 3657 ft, td 3665 ft. Ruston Drilling Co.'s Bowman-Hicks 1, 4-7-12, TA 2640 ft; Bowman-Hicks 2, 35-8-12, set 6⅝ 2330 ft, wo 2690 ft; Bowman-Hicks B-1, 24-7-14, set 6⅝ cas 2073 ft. Warner Quinlan Co.'s Sabine 2, 34-8-12, lcn. Stovall Drilling Co.'s Lefkovitz 1, 33-8-12, set 6⅝ cas 2328 ft, wo 2699 ft. Le Grande et al's Giaque 1, 6-7-12, lcn. D. H. Reddick, Tr.'s, Scretchfield 1, 16-9-12, sd wo 2590 ft. H. S. Autrey's Long-Bell Lbr. Co. 1, 35-8-14, set 8¼-inch cas 1804 ft, topped marl 1907 ft, tested dry 1970 ft, dr 2200 ft. Paramount O&G Co.'s Woolums 1, 116-12, sd 1650 ft. Zeke Lohman's Wyatt Lbr. Co. 1, 18-4-11, dk. Pelican Nat. Gas Co.'s Long Leaf Lbr. Co. 1, 4-7-11, pumping wo gauge, td 2425 ft. La. Long Leaf Lbr. Co. 2, 20-7-12, sp set 12¼-inch cas 95 ft, dr 1000 ft; Sabine Lbr. Co. 1, 1-7-12, topped marl 2292 ft, set 6⅝ cas 2310 ft, 30 ft oil in hole, td 2465 ft, sd wo td 2584 ft. Ray-Dawes Drilling Co.'s Mansfield Hdw. Lbr. Co. 1, 36-8-13, set 6⅝ cas 2115 ft, wo 2550 ft. Henshaw et al's Sabine A-1, 31-8-12, set 6⅝ cas 2177 ft, sd 2525 ft; Sabine A-3, 31-8-12, lcn; Sabine B-1, 31-8-12, TA 2640 ft. C. L. Jett, Tr.'s, Jones 1, 31-8-12, set 6-inch cas 2154 ft, 200 ft oil in hole, blg, td 2210 ft. E. C. Simmons' Leach 1, 31-8-12, lcn; Anderson 1, 31-8-12, lcn. Dooley & Howard's Williams 1, 31-8-12, dk. Joe Burnham et al's Bolin 1, 31-8-12, TA 2436 ft; Bolin 2, 31-8-12, sp set 10-inch cas 101 ft, dr 275 ft. R. L. Burch's Barnett 1, 31-8-12, set 6⅝ cas 2185 ft, pumping 35 bbls, td 2458 ft (formerly carried as Floyd Oil Corp.'s test). Glassell & Merren's Thomas 1, 31-8-12, set 6⅝ cas 2201 ft, wo 2600 ft. Sabine Lbr. Co.'s Fee 1, 31-8-12, set 6-inch cas 2219 ft, tested dry, sd wo 2610 ft. W. S. Smith et al's Colquitt 1, 31-8-12, dk; Williams 1, 31-8-12, rig up; Henderson 1, 31-8-12, dk. F. M. Hood's Winston 1, 31-8-12, set 6⅝ cas 2214 ft, hfo, set 2-in tub, refused flow, arr pump, td 2515 ft. Bahan & Bahan's Meshell 1, 32-8-12, set 6-inch cas 2218 ft, wo 2570 ft. J. R. Crawford's Meshell 1, 32-8-12, sd 1950 ft. Philp Bros.' Dow 1, 31-8-12, boiler blew up, sd 1438 ft. Longoria et al's Belton 1, 31-9-13, rig up. Dudney et al's Pearson 1, 31-8-12, set 6⅝ cas 2194 ft. Jones & Johnson's Pearson 1, 31-8-12, set 6-inch cas 2248 ft, hfo wosr, td 2318 ft. Allen & Thompson's Wall 1, 31-8-12, topped chalk 2294 ft, set 6⅝ cas 2159 ft, td 2305 ft. Gerke et al's Okerson 1, 31-8-12, dk. L. D. Allison's Holliday 1, 31-8-12, rig up. McFann & Pace's Reeves 1, 31-8-12, rig up. W. D. Perritt's Crow 1, 31-8-12, dr 765 ft. L. Nagle's Corky 1, 31-8-12, sp set 10-inch cas 102 ft, dr 1200 ft. Teteco Oil Corp.'s La. Long Leaf Lbr. Co. 1, 18-6-12, sd repr dk damaged by wind, td 27 ft. R. B. Whittle's Corley 1, 31-8-12, lcn. Central Pet. Co.'s McCormick 1, 31-8-12, rig up. San Miguel Oil Corp.'s Blankenship 1, 20-9-11, dk. Wheatcroft et al's Sabine Lbr. Co. 1, 31-8-12, dk.

TENSAS PARISH—Willis et al's Curry 1, 39-11-12e, sd 1760 ft.

UNION PARISH—Fred Stovall's Stovall 1, 32-23-4e, moved rig high water.

WEBSTER PARISH—J. J. Kean's Monzingo 1, 27-18-8e, bailing 8-inch cas 1698 ft. Pat Hudson's Gardner 1, 1-22-11, dk. Magnolia Pet. Co.'s Scroggins 3, 1-22-11, set 8¼-inch cas 2669 ft, wosr td 2707 ft. Mount Vernon O&G Co.'s Pardee 3, 3-22-11, set 6⅝ cas 2655 ft, 4 ft sand sr, td 2663 ft. Sarepta Oil Co.'s Slack 1, 36-23-11, rig up; Gardner 2, 1-22-11, rig up. Merrick Oil Corp.'s Slack 2, 36-23-11, dk. Reid Clark et al's Bolinger 1, 21-22-11, sp set 10-inch cas 210 ft. E. W. Bateman's Cook 1, 2-22-11, lcn; Cook 2, 2-22-11, lcn. Ideal O&G Co.'s Coyle 1, 24-23-11, dk. K. C. Supply Co.'s Cochran 1, 36-23-11, rig up.

WEST CARROLL PARISH—Palmer Corp.'s Marston A-1, 11-19-10e, set 5-inch cas 2592 ft, dr red shale 2784 ft.

MOUNTAIN STATES

NEW MEXICO

CHAVES—Warman Oil Trust's Blackdome 1, ne 27-13s-24e, dr 1195 ft.

DE BACA—Matador Oil Co.'s Wood 1, se 6-4n-20e, dr at 2840 ft.

EDDY—Van Horn et al, se 18-19s-26e, dr 2100 ft. R. D. Compton's State 1, nw 2-20s-25e, dr 1760 ft. Henderson et al's Grier 1, nw 21-16s-31e, drilling at 2980 ft. Lockhart et al's Parke 3, se 15-17s-30e, spd and sd. Leonard & Levers' State 2, 21-17s-29e, 9½M at 2283 ft. Pueblo Oil Co.'s Russell 5, nw 18-17s-31e, dr 3000 ft.

GUADALUPE — Los Angeles-Hollywood Synd.'s McMullen 1, se 24-5n-16e, rig.

LEA—Shell Pet. Corp.'s State 1, ne 31-18s-38e, dr 3300 ft. Shell's State 2, nw 19-18s-38e, dr 2875 ft. Empire's Closson 1, se 6-22-36, dr 4060 ft. Walker et al's Terry 2, se 10-19s-38e, spudded and sd. Empire's Fowler 1-C ne 31-18s-38e, dr 375 ft. Bordage et al's Hughes 1, 27-19s-38e, sd indefinitely. Morton et al's State 1, nw 31-11s-38e, dr 4700 ft. Barnsdall Corp., 1, se 28-16s-38e, plugged 5160 ft. Cranfill-Reynolds' State 1-C, sw 16-23s-36e, dr 3860 ft. Fisher & Lowrie's State 1, nw 11-18s-36e, dr 4850 ft. Texas Pacific's State 4, 21-23s-36e, sulfur water 3808 ft. Walker et al's Terry 2, se 10-19s-38e, dr 1020 ft. Texas-Pacific's State 1G, 24-18s-37e, dr 2000 ft. Hobbs High Oil Co.'s State 1, se 35-18s-38e, standardized 276 ft. Ohio Oil Co.'s Northrop 1, se 32-18s-39e, dr 2995 ft. Ohio's McDonald 1, 15-29s-36e, 16-in. cem 645 ft. Maljamar O&G Corp.'s Baish 3, nw 21-17s-32e, cem 2850 ft. Midwest Refg. Co.'s State 36, sw 10-19s-38e, run and cem 10¾-in at 1658 ft. Midwest's State 13, nw 15-19s-38e, dr 955 ft. Midwest's E. H. and M. Byers 33, ne 4-19s-38e, dr 580 ft. Ohio Oil Co.'s State 1, 30-18s-38e, 20-in cem 215 ft. Landreth Prod. Co.'s State 1, se 7-18s-38e, dr 510 ft. Amerada Pet. Corp.'s McKinley 1, nw 30-18s-38e, dr 600 ft. Calif. Co.'s State 1, ne 29-18s-38e, ready to spud. Gypsy Oil Co.'s Grimes 1, nw 32-18s-38e, dr 315 ft. Prairie O&G.'s Crump 1, ne 15-19s-38e, dr 105 ft. Texas Prod. Co.'s State 1-C, ne 25-18s-37e, dr 365 ft.

RIO ARRIBA—Berringer et al's Hartman 1, ne 8-29n-7w, sd at 825 ft. San Juan Pet. Co.'s Government 1, sw 14-30n-7w, stand 270 ft.

SAN JUAN—Dorothy Oil Co.'s Terwillinger 2, 29-30-9w, dr 1346 ft. Southern Union Gas Co.'s Day 1, se 20-28n-10w, sd 1455 ft. Blackrock Oil Co.'s Blackrock 1, se 11-28n-13w, wtg on extension permit at 1550 ft. Childers Dr. & Pr. Co.'s Westwater 2, nw 24-31n-16w, sd 2525 ft. Reserve Oil Co.'s Shaffer 2, ne 1-21n-14w, sd 780 ft.

SANDOVAL—Mayflower O&G Co.'s Marion 1, se 23-20n-2w, dr 1730 ft.

SAN MIGUEL—Pioneer O&G Co.'s Thunderbird 1, nw 14-15n-16e, wtg dr line 2355 ft. Starr Oil Co.'s Adams 1, ne 25-17n-17e, 6⅝-in at 3271 ft. Cibola Pet. Co.'s Crown 1, se 9-13n-14e, ready to resume 320 ft. Hershfield Dev. Co.'s Cabra Springs 1, ne 21-12n-22e, stand 735 ft. Benedict et al's Wilson 2, nw 25-17n-16e, ready to spud.

SOCORRO—Lockhart & Co.'s Stackhouse 1, 14-3s-6e, dr 2325 ft.

TORRANCE—Williams et al's Staplin 1, ne 16-8n-10e, stand 2038 ft. J. B. Witt O&G Co.'s Kutchem 1, 12-7s-7e, dr 510 ft.

VALENCIA—Rio Puerco Oil Co.'s N. M.-Ariz. Land Co. 2, ne 13-6n-2w, wtg for pipe 3145 ft. Acme Oil Co.'s N. M.-Ariz Land Co. 1, 26-6-3, dr 4735 ft. Harlan et al's Harlan 1, 5-6n12e, sd 4230 ft.

MONTANA

BIG HORN—Montana Prod. Co.'s Lynde 2, 21-6s-35e, sd 3056 ft.

CARBON—Atlantic Oil Co.'s 20-7s-24e, sd in Madison 1840 ft. Beartooth Oil Co. 1, 7-7s-21e, dr 550 ft.

CARTER—Carter & Co. 1, nw 11-2n-58e, to test 2030 ft. Montesota Oil & Dev. Co. 1, se 7-8s-58w, set cas 930 ft. Poss Pet. Co., nw 7-8n-58w, sd 2505 ft.

CASCADE—Peigan et al, 36-20n-3w, try for water in Sunburst. Eden Oil Co. 1, sw 27-18n-4e, sd 1326 ft.

CUSTER—Montana Belle Oil Co. 1, ne 28-8n-45e, sd 4562 ft.

DANIEL—Whitetail Oil Synd. 1, nw 10-36n-50e, sd 1467 ft.

FERGUS—Melton Corp, sw 24-21n-17e, set cas 2700 ft, prep to resume.

GALLATIN—California Co.'s Ringling 1, se 35-5n-7e, dr 4475 ft.

GLACIER Glacier Oil Co.'s Omsberg 1, nw 33-35-5w, run 15½-in to 250 ft. Kootenai O&G Co. 1, 13-35n-6w, skid. Fulton Pet Corp.'s Hannah 1, ne 28-36n-12w, mvg in.

GOLDEN VALLEY—Golden Valley Oil Co. se 28-6-22, dr 400 ft.

LIBERTY—Square Deal Oil Co.'s Federal Land Bank 1, 1-32n-7e, pipe trouble, td 3470 ft. Thompson's Thompson 1, sw 7-34n-4e, set cas 2375 ft. Northland O&G Co.'s Yurman 1, 35-33n-6e, run pipe 1440 ft. Sunburst O&G Co.'s Watford 1, ne 18-36n-60, dr 2000 ft. Sunburst's McLaren 1, se 9-37-6e, rigging.

MUSSELSHELL — Minnesota-Flatwillow's Ivanhoe Dome 1, 7-11-31, resuming.

PETROLEUM—Minnesota-Flatwillow, 2 sw 5-12n-25e, dr bel 1560 ft. Oregon-Flatwillow Oil Co. 1, 3-13n-26e, dr below 200 ft.

PONDERA—Hiland-Vandaele's Kendall 1, ne 35-30n-3w, sd 4215 ft. Miller Bros' Bruins 1, nw 17-28n-1w, rig up.

ROSEBUD—Prairie O&G Co.'s N. P. 1, 9-10n-38e, sd 2310 ft. Prairie's N. P. 3, 26-10n-38e, dr out cem 2545 ft. Prairie's N. P. 4, 28-10n-38e, sd 65 ft.

SHERIDAN—Sheyenne O&G Co.'s 1, nw 15-36n-53e, to res 1400 ft.

TETON—Texas Prod. Co. se 2-26-4w, dr 300 ft. Andover Oil Co.'s Carlson 1, ne 5-24-4w, sd 150 ft. Newman et al's Fitzgerald 1, 26-32n-1w, rig up. Rocky Mtn. O&G Co.'s Salmond 1, ne 4-23n-8w, water trouble, td 1280 ft. Earl Oil Corp. 1, se 22-22n-82, dr 1500 ft.

TOOLE—Anaconda Pet. Co.'s Bartholote 1, ne 19-36n-2w, sd 1600 ft. John Thomas et al's Buckley 1, ne 1-37-4w, dr 1645 ft. Black Gold Pet. Co.'s Syrs 1, sw 30-36-28, dr 2000 ft. Ergenbright's Beaupre 1, se 32-37-1w, mvg in. International Roy. Hold. Co.'s Henry 1, sw 26-35-3e, dr 1965 ft.

VALLEY—T. P. Jones, nw 31-37n-38e, dr 200 ft.

COLORADO

ADAMS—N. M. Slatt's Hill 1, se 27-35-64w, dr 1405 ft.

ARAPAHOE—McDebb Dr. Co.'s Fitzsimmons 1, 7-45-66, dr 5500 ft.

ARCHULETA — Outwest Investment Co.'s Fitzhugh 1, sw 34-33n-1e, ready to spud.

BENT—Continental's Pipe Springs 1, se 27-27-49, dr 5965 ft.

BOULDER—Reliance Oil Co.'s Erickson 1, nw 33-2n-70w, dr 3145 ft.

DELTA—Crawford O&G Co.'s McKissen 1, ne 28-15s-91w, dr 1030 ft.

DOLORES—Transcontinental's Glade 1, nw 30-41n-16w, co 5900 ft.

ELBERT—Belmont Oil Co.'s Maher 1, se 4-6-59w, standardizing 3720 ft.

FREMONT—Westerville Oil Co.'s State 1, nw 16-18-69, sd 1214 ft. Hammond & Roscoe's Beltrame 1, se 1-19s-70, sd 1800 ft.

GARFIELD—Fulton Pet. Co.'s Permit 1, ne 8-8s-102w, bldg rig.

JACKSON—Midwest's Rich 21-X, nw 9-6n-80w, ur and co 3415 ft. P. and R's Hendershot 1, ne 2-6n-81, st to 3490 ft, td 3610 ft.

JEFFERSON—Ruby Hill O&G Co.'s Braden 1, se 24-4s-69w, prep to res 3568 ft.

HUERFANO — Parker Club and Kinney-Coastal's Fee 1, se 4-28s-68w, prep to strrm at 4116 ft. Elliott et al's Abeyta 1, nw 31-27s-65w, location.

LAS ANIMAS—Trinidad Dev. Co.'s Flontz 1, se 23-32-63, set 5 3/16-inch at 2700 ft. water trouble. American Helium Gas & Oil

SKILLED SUPERVISION GUARANTEES THE QUALITY OF GULF PRODUCTS

COASTAL AND PARAFFINE CRUDES
GASOLINE — LUBRICATING OILS
NAPHTHA — GAS — OILS
WAX — PETROLEUM COKE
CYLINDER—ENGINE—CORDAGE

GULF REFINING COMPANY

General Sales Offices

PITTSBURGH, PA.

District Sales Office

New York Boston Philadelphia Louisville Atlanta Houston New Orleans

Ocean Terminals

Boston (Beverly), Mass.
Providence, R. I.
New York Harbor (Bayonne, N. J.)
Jacksonville, Fla.
Port Tampa, Fla.
Mobile (Magazine Point, Ala.)
Philadelphia (Girard Point, Pa.)
Charleston, S. C.
Savannah, Ga.
New Orleans (Gretna, La.)
Port Arthur, Texas
Galveston, Texas

Co.'s Boling 1, sw 3-29-60, lost hole at 160 ft and skidding rig.

LARIMER—Mosher et al's Reed 1, nw 28-4n-69w, bailer lost 3160 ft. Barrows et al's Barrows 1, se 7-11-68, sd 2310 ft. Continental's Scott 5, nw 6-9n-68w, dr 4170 ft. Deininger et al's Rembey 1, ne 35-4n-70w, to resume at 354 ft. Standard of Colo.'s Hertha 1, nw 21-4n-69w, fsg 2821 ft. Erbe Oil Co.'s Montana 1, ne 26-11n-69w, location.

LA PLATA—McGarr Pet. Corp.'s Red Mesa 1, ne 27-33n-12w, dr 1000 ft. Detroit Oil Assn.'s Olbert 1, se 9-35-12w, dr 2525 ft.

LINCOLN—Kelly Oil Co.'s State 1, ne 26-14n-57w, standing 3350 ft.

MESA—Argo Oil Co.'s Hoel 1, ne 23-8s-104w, sidetr cas, td 2955 ft.

MOFFAT—McLaughlin et al's Williams 1, 2-3-92, abd 4515 ft. Vermillion O&G Synd, 1, se 23-9n-100w, resuming ay 642 ft. Texas Prod. Co.'s Berlin 1, ne 9-12n-100w, ur 2455 ft. Midwest's Hannawalt 24, 4-6n-92w, dr 2498 ft. Mtn Fuel Supply, 25-12-101, dr 2745 ft. S. H. Keoughan et al's State 1, sw 16-4n-101w, spdg.

MONTROSE — Uncomphagre O&G Co.'s Colorado 1, nw 27-50-10, resuming at 2031 ft.

MORGAN—Ind. Ter. Illum. Oil Co.'s State 1, ne 16-1n-57w, dr 800 ft.

PUEBLO—Buelah Dome Co.'s Hedland 1, se 7-23-67w, sd 932 ft.

RIO BLANCO—Texas Prod.'s Potter 1, se 30-2n-69w, fsg 5986 ft. White Eagle's Fordson 1A, se 9-2s-96w, dr 3885 ft.

ROUTT—Gillespie et al's Omholt 1, se 29-4n-87w, ready to spud.

WELD—Platte Valley Pet. Corp.'s Patterson 1, se 24-6n-61w, dr 5805 ft.

WASHINGTON—Middlemist Oil Co.'s Middlemist 1, se 14-4s-56w, set 15½-in. casing at 1030 ft.

YUMA—Phillips Pet.'s Anderson 1, nw 3-2s-42w, ur to 5055 ft.

UTAH

BOX ELDER—Utah-Pennsylvania Oil Co.'s Penrose 1, nw 3-10n-4w, td 3410 ft. Leonora Mining & Milling Co.'s Swoboda 1, nw 9-8n-7w, co 2755 ft.

CARBON—St. Thos. Oil Co., 1-14s-9e, fsg 2300 ft. Price River Pet. Co.'s Price 1, ne 16-14-10, td 3100 ft.

GRAND—Crescent Oil Synd.'s McCarthy 1, sw 27-21s-19e, gas 2045 ft, td 2200 ft. Utah Southern Oil Co.'s State 1, 26-21s-33e, dr 2050 ft. Cisco Springs Synd.'s Moss 1, sw 9-20s-23e, fsg 3500 ft. Beaver Valley's Blackrock 2, se 19-25s-9w, sd 600 ft.

KANE—Midwest Refining Co.'s Parry 1, se 14-39s-1w, dr 3830 ft. Beaver Valley Oil Co.'s Blackrock 1, ne 20-25s-9w, fsg pipe 3500 ft. Beaver Valley's Blackrock 2, se 19-25s-9w, sd 600 ft.

SAN JUAN—Boulder Knoll Oil Co.'s Boulder Knoll 1, nw 17-34w-25e, stand 2640 ft. Continental's Boudary Butte 1, se 22-43-22, set cas 5612 ft.

UINTAH—Home Oil Co.'s Spahr 1, se 8-5s-21e, sd 1165 ft. Maude Ellen Oil Co.'s Neal 1, se 28-3s-21e, td 1850 ft. Western Venture Corp.'s Krumveida 1, se 6-5s-21e, sd 1315 ft.

UTAH—Diamond Oil Co.'s 1, nw 16-8s-5e, reaming 1700 ft.

WYOMING

BIG HORN—P. & R. Govt. 3, 24-56-98, kill gas 4234 ft, to dd. Westland Oil Inc., 24-54-95, sd 360 ft. Wisconsin Holdings, 4-55-97, sd 665 ft. Yellowstone Pet. Co., 7-57-97, dr 2780 ft.

CARBON—P. & R., 2-19-88, sd 4562 ft. C. E. Bivens et al's Baggs 1, 35-13-92, co at 2200 ft.

CONVERSE—Pioneer Oil Co., 5-31-70, dr bel 3200 ft. Jno Ackard, 21-31-69, res 3461 ft.

CROOK—W. F. Clark et al, 29-49-66, location.

FREMONT—Texas Pro. Co.'s State 1, 36-34-95, dr 3316 ft. P. & R. 1, 33-34-92, bldg rotary, td 532 ft.

HOT SPRINGS—Midwest's 8 Weeks, 6-44-98, tght cave 1515 ft, td 1540 ft. Ohio's Smith 1, 8-46-99, dr 4393 ft. Gebo Cons., 1 se 32-44-95, resuming 1245 ft. C. F. Robertson et al, se 17-43-92, sd 450 ft.

JOHNSON—United Oil Co., 7-47-82, dr 1700 ft. R. C. Tarrant, 4-43-82, sd 600 ft. Dome Synd., 3, 4-43-82w, sd 720 ft.

LINCOLN—Midwest, Grey's River, 25-37-117, res 1731 ft. Mtn. Oil Corp., 36-25-115, spd 300 ft.

NATRONA—Midwest's Midway 1, se 23-35-79, spd and sd. Casper Prod Co., 36-36-81, bldg rig.

PARK—P. & R.'s Pitchfork 1, 14-48-102, dr 2141 ft. Henderson Prod. Co., 31-58-99, sd 3000 ft. Resolute Oil Co., 17-27-101, dr 4607 ft. Cody Pet. Co.'s Danker 1, se 22-57-98, 7M show, td dd.

SWEETWATER—Vermillion Oil Co., 1, sw 16-12-99, 10-in cem 2650 ft, to test gas.

UINTA—California Co.'s U. P. 1, 7-17n-119, abd 4815 ft.

WESTON — Gose Synd., 28-47-65, show at 4856 ft. Updike et al's Fiddler Creek 1, 11-45-64, resum at 1000 ft.

IDAHO

BANNOCK — Norton Bros. et al's Marsh Valley 2, lot 5, sec 19-10s-37e, dr ahead from 2650 ft.

CLARK—Monida Oil Co.'s Beaver Dome 1, nw 32-14n-36e, sd 1140 ft.

POWER—Gem State Pet. Co.'s Arbon Valley 1, nw 2-11s-33e, sd 3800 ft.

TETON—Grand Teton Oil Co.'s Horseshoe 1, se 33-5n-44e, run 8-in to 2310 ft Teton Land & Leasing Co.'s Bevan 3, se 28-5n-44e, fsg 1580 ft.

OKLAHOMA

WOODS COUNTY—T 28n, R 16w, sec 23, Peerless Oil Co.'s Cromwell 1, c nw ne, show oil & gas 5375-89 ft, dr 5570 ft.

GRANT COUNTY—T 28n, R 4w, sec 12, Boucher et al's Dedman 1, sw c se, dr 4810 ft.

WOODS COUNTY—T 27n, R 16w, sec 33, Sinclair's Share 1, c ne sw, td 6790 ft rur.

ALFALFA COUNTY—T 27n, R 14w, sec 12, Smith Bros.' Forbes 1, ne c se nw nw, sd 1420 ft.

KAY COUNTY—T 27n, R 2e, sec 17, Blankenship Pet. Co.'s Hansen 1, sw c nw sw, 15-in at 795 ft.

HARPER COUNTY—T 26n, R 24w, sec 14, Sinclair's Howell 1, c sw sw, show oil 6711-16 ft, dr 8535 ft.

GRANT COUNTY—T 26n, R 3w, sec 23, Otstot Dev. Co.'s Taper 1, ne c se, show oil 4355-5515 ft, dr 5170 ft.

KAY COUNTY—T 26n, R 2e, sec 32, J. A. Vincent et al's McNeal 1, nw c ne, sd 2795 ft.

HARPER COUNTY—T 25n, R 20w sec 12, Empire's Bruce 1, sw c ne ne sw, dr 4050 ft.

WOODS COUNTY—T 25n, R 15w, sec 10, Bu-Vi-Bar et al's Fee 1, se c sw, sd 6104 ft.

GRANT COUNTY—T 25n, R 4w, sec 22, Cowden's Vollmer 1, ne c se ne sw, lost tools 5640 ft sd.

ALFALFA COUNTY—T 24n, R 11w, sec 14, J. V. Bailey et al's Acre 1, c sw ne, hfw water at 4649 ft, dr plugs 4660 ft w.o.c.

GARLAND COUNTY—T 24n, R 6w, sec 9, Pulse & Beamer's White 1, se c nw, hfw 4730-4800 ft fshg, td 5580 ft.

WOODWARD COUNTY — T 23n, R 17w, sec 23, Prairie & Transcontinental's Woodward 1, ne c, dr 6682 ft.

GARFIELD COUNTY—T 23n, R 4w, sec 32, Shell et al's Loomis 1, c nw nw, dr 5561 ft.

NOBLE COUNTY—T 22n, R 1w, sec 28, Gypsy et al's Berstram 1, se c nw, dr 4570 ft.

WOODWARD COUNTY—T 21n, R 19w, Burgoyne Bros.'s Merklin 1, sw c se ne, sd 1910 ft.

MAJOR COUNTY—T 20n, R 14w, sec 23, Kealer et al's Horton 1, c ne ne spd and sd.

GARFIELD COUNTY—T 20n, R 4w, sec 10, Continental et al's Brown 1, cel ne nw sw, 20M gas 5175-5180 ft, mudded off, sand 5958-60 ft, shot 40 qts 800 bbls.

BLAINE COUNTY—T 19n, R 10w, sec. 13, Wahoma Pet. Co.'s Phillips 1, c nw sw, dr 3010 ft.

LOGAN COUNTY—T 18n, R 2w, sec 23, Healy et al's Quier 1, se c sw, td 3970 ft sd. T 17n, R 4w, sec 34, Currie et al's Katchor 1, sw c ne sw, cellar sd. T 17n, R 1e, sec 22, Prairie & Slick's Simms 1, ne sw se, dr 1620 ft.

KINGFISHER COUNTY—T 16n, R 7w, sec 6, Gault Brown's Boch 1, c nw se, (owdd) td, 6022 ft sd.

LOGAN COUNTY—T 16n, R 1w, sec 23, Prairie & Slick's Morgan 1, c nw ne, dr 3240 ft.

TEXAS COUNTY—T 6n, R 14e, c.m. sec 23, Argus Gas Co.'s Longston 1, c sw, 12-in at 500 ft.

CIMMARON COUNTY—T 5n, R 5e, c.m. sec 27, Magnolia et al's School Land 1, c sw nw, sd 500 ft.

TEXAS COUNTY—T 2n, R 18e, c.m. sec 23, Palo Duro Oil Co.'s Groves 1, ne sw sw, sd 350 ft.

OSAGE COUNTY—T 24n, R 4e, sec 28, Kay County Gas Co. 1, cnl sw sw, show gas 2495-2565 ft hfw, dr 3670 ft.

OSAGE COUNTY—T 24n, R 5e, sec 24, Continental 1, nw se se, Wilcox 3234-58 ft water sd 3549 ft.

PAWNEE COUNTY—T 23n, R 5e, sec 15, Cochran et al's McFadden 1, ne c sw rig.

OSAGE COUNTY — T 22n, R 8e, sec 3, Peters & P&R 1, sw c ne, dr 2425 ft.

PAWNEE COUNTY—T 20n, R 5e, sec 22, J. M. Scott et al's Jones 1, sw c ne, rigging up sd.

PAYNE COUNTY—T 18n, R 4e, sec 6, F. M Marrs et al's Tietz 1, sw nw se, cln. T 17n, R 4e, sec 4, Wheeler & Mote's Funnel 1, ne c se, dr 3820 ft.

LINCOLN COUNTY—T 17n, R 5e, sec 16, Ed Jilson et al's School Land 1, se c sw, fshg 3718 ft. T 16n, R 2e, sec 35, T. B. Slick's Hammer 1, se c sw nw, dr 4627 ft. T 16n, R 4e, sec 2, Deep Rock et al's Prowant 1, nw ne nw, dr 1550 ft.

OKFUSKEE COUNTY—T 13n, R 9e, sec 14, Flynn & Morgan's Burton 1, ne sw se, dr 1795 ft. T 13n, R 9e, sec 15, Erwin et al's Allen 1, se sw ne, 3615 ft. T 12n, R 9e, sec 36, Henry Oil Co.'s Harjo 1, nw c fshg 2785 ft. T 12n, R 10e, sec 3, Sheppard et al's Sheppard 1, se nw sw, 4-in at 3664 ft sd. T 10n, R 10e, sec 25, Transcontinental et al's Lasley 1, sw c nw, sand 3205-30 ft, 40M gas.

MUSKOGEE COUNTY—T 11n, R 19e, sec 21, E. Mills et al's Martin 1, nw c se, td 1001 sd.

PITTSBURG COUNTY—T 9n, R 16e, sec 32, Pattison et al'c McDuff 1, sw nw se, sand 5556-60 ft, swab water, fshg.

HASKELL COUNTY—T 9n, R 18e, sec 10, Marion Oil Co.'s Sanders 1, nw ne sw, 2M gas 1800 ft sd 2692 ft.

LATIMER COUNTY—T 6n, R 22e, Sec 23, Limestone O&G Co.'s Shaw 1, nw ne nw, show gas 1570-77 ft. 6-in at 2030 ft.

OKLAHOMA COUNTY—T 13n, R 3w, sec 17, Prairie & Slick's Dills 1, c se nw dr, 4585 ft. T 13n, r 3w, sec 35, Magnolia & Ramsey's Johnson 1, ne ne sw, dr 6135 ft. T 13n, R 1w, sec 13, Tom Slick's Martin 1, c nw nw, td 6965 ft, pb-6625 ft w.o.c. T 12n, R 4w, sec 17, C. F. Cuniff's St. Joseph 1, sw ne sw ne, dr 5700 ft. T 11n, R 2w, sec 3, Ryan Consolidated's Lawton 1, ne c nw, dr 6455 ft.

POTTAWATOMIE COUNTY—T 6n, R 3e, sec 56, Sykes et al's Cook 1, sw nw ne, rig.

CLEVELAND COUNTY—T 6n, R 1e, sec 20, Brownfield's Corbett 1, c sw ne, dr 5585 ft.

HUGHES COUNTY—T 9n, R 12e, sec 29, Canady et al's Canard 1, nw c sw dr 3218 ft.

ROGER MILLS COUNTY—T 12n, R 24w, sec 23, Bucy & Stone's Williams 1, c sw sd 2243 ft. T 11n, R 26w, sec 4, J. J. Rook's Davis 1, c nw ne, sd 2840 ft.

BECKHAM COUNTY—T 8n, R 22w, sec 29, Roy Johnson's Brewer 1, c nw, rig.

CANADIAN COUNTY—T 10n, R 6w, sec 1, J. V. Bailey's Robinson 1, c ne nw, sd 150 ft.

WASHITA COUNTY—T 9n, R 20w, sec 10, Southern Inv. Co.'s Musie 1, nw c rig up and sd at 300 ft.

BECKHAM COUNTY—T 8n, R 22w ,sec 20, Carson et al's Denby 1, sw se ne, sd 1700 ft.

GREER COUNTY—T 7n, R 22w, sec 1, Roy Good et al's Cliffell 1, nw c, dr 730 ft. T 6n, R 24w, sec 17, I.T.I.O. et al's Fee 1, c ne dr 2285 ft.

HARMON COUNTY—T 4n, R 24w, sec 17, Harmon-Texas Oil Co.'s Headley 1, ne c, sd 1510 ft.

COMANCHE COUNTY—T 3n, R 9w, sec 3, Okla. Nat. Gas Co.'s Doebel 1, ne c sw sw sw, sd 1450 ft.

COTTON COUNTY—T 3s, R 9w, sec 8, Empire's Chambers 1, nw c se, dr 4179 ft.

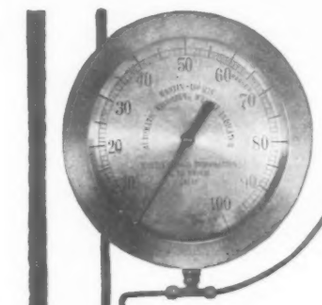
PONTOTOC COUNTY—T 5n, R 6e, sec 8, Magnolia et al's Killcrease 1, sw ne ne, r.u.s.t. 3068 ft.

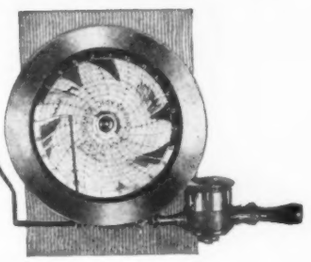
HUGHES COUNTY—T 5n, R 10e, sec 30, Erwin et al's Jones, se c ne, water 1860-70 ft, sd 3115 ft. T 5n, R 11e, sec 15, J. J. Wright's Roberts 1, se c sw, rig.

GARVIN COUNTY—T 4n,R 3e, sec 10, C. R. Obermeyer's Stricklin 1, ne c sw sd, 2443 ft.

MURRAY COUNTY—T 2n, R 2e, sec 27,

MARTIN-DECKER AUTOMATIC RECORDING WEIGHT INDICATOR



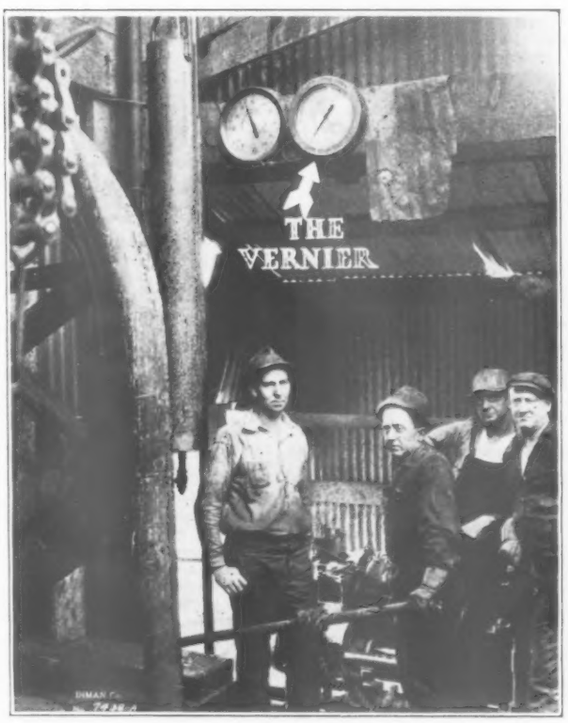


Accurate Weight Control

Deep Hole » » » Small Drill Pipe

With the MARTIN-DECKER

VERNIER



WILSHIRE OIL COMPANY'S

AMBASSADOR BAKER No. 14,

SANTA FE SPRINGS
7794 FEET DEEP

The Crew, left to right:

ROY BESSENT
C. H. STRICKLAND
JOHN ERICKSON
F. L. PETERSON, *Driller.*

The Wilshire Oil Company in Santa Fe Springs has had enviable success in drilling for the deeper zones. They have completed many redrill jobs through liners as small as 4¾". Making hundreds of feet of new hole with drill pipe ranging in size from 2" to 4".

Mr. Merle Boles, General Field Superintendent, is strong in his praise for the VERNIER for this work and attributes much of the success of his deep sand completions to the constant use of the MARTIN-DECKER WEIGHT INDICATOR and VERNIER GAUGE.

MARTIN-DECKER CORPORATION

Formerly

Martin-Loomis Corporation

3433 Cherry Ave.,
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CALIFORNIA

Mid-Continent Distributors
Reed Roller Bit Company
Houston, Texas

Foreign Distributors
Oil Well Supply Company
Pittsburgh, Pa.

WEIGHT RECORDING, MEASUREMENT AND CONTROL

Cheafton Royalty Co.'s Hendricks 1, sw se nw, sd 900 ft.

ATOKA COUNTY—T 3s, R 10e, sec 18, Brookshire et al's Guinn 1, nw c, sd 80 ft.

CARTER COUNTY—T 4s, R 2e, sec 32, Tex-Okla. Dr. Co.'s Anderson 1, se ne se, fshg 2580 ft.

BRYAN COUNTY—T 9s, R 9e, sec 36, W. C. Endicott et al's Craig 1, c nw ne, td, 2160 ft d and a.

SOUTH LOUISIANA

ACADIA PARISH — Yount-Lee Oil Co.'s Houssiere-Latrielle 8, Evangeline, cas cemented at 7050 ft. The Texas Co.'s Rayne Hrs. 5, Evangeline, dr sand at 8045 ft. Calcasieu Oil Co. et al's Hayes 1, 10-8s-1w, dr 6250 ft gbo.

AVOYELLES PARISH — R. A. Tippett's Chatalin 1, 5-1n-3e, dr 2100 ft.

CALCASIEU PARISH — Adams Oil Co.'s Roderick 1, Starks, dr 600 ft. J. O. Davis' Ind. Lbr. Co. 1, Starks, sd 3770 ft. Shell's Heyd 1, Iowa, dk.

CAMERON PARISH—Pure's Yount-Lee 9, will dr plug at 4666 ft. Vacuum Oil Co.'s Cameron Meadows 1, 21-14s-13w, washing over 4-inch dr stem which was stuck. Calcasieu Oil Co.'s Caldwell 5, E. Hackberry, dr 6600 ft shale.

IBERIA PARISH—The Texas Co.'s Vermilion Bay State 5, bldg foundation. Jefferson Lake Oil Co.'s Lake Peigneur 6, Jefferson Island, sd 100 ft.

IBERVILLE PARISH—Shell's Wilbert 4, White Castle, oil sand 5165-75 ft, made successful ds test, r to set cas. Standard's Schwing 4, Bayou Blue, sd 2088 ft for orders; Wilbert 6, Bayou Blue, will plug back; Cyrus Case 1, Bayou des Glaise, rebldg dk.

JEFFERSON PARISH—Humble's Delaware Fur Co.,1, 2-16s-23e, moving in.

JEFFERSON DAVIS PARISH—Yount-Lee Oil Co.'s Geo. Courtney 1, Welsh, dr 1950 ft; Abbott 1, dr 1800 ft. Pure's Day 1, 1½ mi sw Welsh, dr 4930 ft.

LA FOURCHE PARISH—The Texas Co.'s LL & E-Leesville 1, Leeville dome, 27-21s-22e, dr 2000 ft.

PLAQUEMINES PARISH—Humble's Lake Washington 1, Lake Grande Ecaille, dr shale 5020 ft. The Texas Co.'s Garden Island 4, moving in.

ST. LANDRY PARISH — Elbof Exploration's Valmont Ledoux 1, Eunice, sd 4362 ft. The Texas Co.'s Botany Bay 7, Port Barre, dr 2468 ft. Gulf's W. H. Hoskins 2-A, Port Barre, dr 3600 ft. Hebert-Baker Oil Co.'s E. D. Fisher 1, dr 4156 ft hard shale.

ST. MARY PARISH — Pure's Wax Lake State 2, 11-17s-9e, set cas 1012 ft. The Texas Co.'s South Coast Co. 1, 41-14s-10e, lcn.

ST. TAMMANY PARISH—Washington & St. Tammany Drlg. Co.'s A. Cousack 1, dr 3385 ft.

TERREBONNE PARISH — Chas. Paggi's Evergreen 2, dr 1785 ft sandy shale. Freeport Sulphur Co.'s Nelson 1, dr 2675 ft gbo. The Texas Co.'s LLE-Bay Junop 1, dr 1050 ft shale and sand; Caillou Island State 3, driving piling; Four Isle 3, abn 3772 ft cap rock; Lake Pelto B-2, dr 2057 ft rock; Bay St. Elaine 4, dr 4620 ft gbo; Lake Barre State 4, capped piling; Dog Lake Bayou 2-A, dr 2085 ft sand.

TEXAS GULF COAST

Completions

HARDIN COUNTY—
Gulf Coastal Oil Co., Nona Mills 1, 5 mi e Saratoga ..... * 1725

WASHINGTON COUNTY—
W. D. Anderson, Muellar 1, ne Burton ..... * 2666

AUSTIN COUNTY—J. T. O'Hara et al's Batla 1, 2 mi nw Raccoon City, fsh 4000 ft. Black Oil Co.'s Lancashire 1, 3 mi s Sealey, dr 3200 ft shale. McInnerrey & Harris' Hattie McDade 1, west Kinney, sd 500 ft. Empire's J. T. Boyd 1, San Felipe, into cap rock 3830 ft, dr ahead.

BRAZORIA COUNTY—Thos. Faust et al's Fee 6, 2 mi s Nash Dome, set cas at 4075 ft. Shell's Blakely-Winston 1, 2 mi ne Danbury, cemented back after drlg into salt around 5225 ft, will test 1575-1667 ft. Rycade & Amerada's Rapid City 1, 2 mi s Danbury, dr 3945 ft gbo. The Texas Co.'s Ewing 1, 1½ mi n Manvel, dr 4765 ft rock. Mills Bennett's E. Randon 1, Allen Dome, dr 4860 ft lime. United Oil Synd.'s Moores 1, 3 mi n Danbury, dr around 400 ft.

CHAMBERS COUNTY—Pure's Mayes 11, Lost Lake, had gas blowout, re-cementing 6¼-inch cas, td 2704 ft. Pure's Kirby 1, Cove, dr 2550 ft shale and lime. Pure-Rycade's Jackson 1, 6 mi w High Island, ru. Shell's Herff 1, Moss Bluff, dr 4150 ft sndy shale. Superior Oil Co.'s Jackson 1, 4 mi w High Island, dr 3700 ft gbo. Chicago Oil Corp.'s Lawrence 1, 10 mi s Barbers Hill, sd 3412 ft.

FORT BEND COUNTY — Gulf's Brazos Valley Irrig. Co. 2, 3 mi sw Clodine, dr 3090 ft gbo and lime; Moore 21, Moores Field, dr 3765 ft sticky shale; Moore 22, Moores Field, dr 3495 ft hard sand and lime. Pure's Jackson Brown et al 1, Pilant Lake, Wm. Barrett & Abner Harris sur, abn 4515 ft shale.

HARDIN COUNTY—Gulf Coastal Oil Co.'s Nona Mills 1, 5 mi e Saratoga, abn at 1725 ft. D. O. Speights' Gidrey 1, 4 mi s Batson, dr 906 ft gbo.

HARRIS COUNTY—Humble's Simms-Smith 77, Goose Creek, dr 6640 ft shale. Humble's Warren 7, Hockley, dr 5530 ft shale; Minnetex 2, Mykawa, sd 1216 ft; Siadous 1, Mykawa, dr 5086 ft sticky shale. Mrs. J. C. Baldwin's Kitzman 1, 2 mi n Cypress, sd 4247 ft. Martin-Drake-Jones, Haney 1, 3 mi e Elena, dr 5090 tf shale and lime. Sloan Prospecting Co.'s Ulrich 1, 5 mi nw Barbers Hill, abn in water sand at 6221 ft; Davis 1, lcn 2000 ft nw Ulrich 1. Cranfill-Reynolds Co.'s Rorick 1, 6 mi s Cypress, dr 2035 ft sandy shale. Strang Pet. Corp.'s Good 1, Deer Park, dr 2685 ft gbo and boulders. Rich et al's Highland Farms 1, near Elena, stdg 100 ft.

JACKSON COUNTY — The Texas Co.'s Mitchell 1, 12 mi s Edna, dr 1885 ft gbo and boulders.

JEFFERSON COUNTY — Westbury Oil Co.'s West 1, S. Choate sur, sd 3090 ft. Gulf's Burrell 5, Fannett, dr 5236 ft shale. The Texas Co-Houston Oil Co.'s Fitzhugh 1, Big Hill, prep sdtr 5075 ft, td 5863 ft.

LIBERTY COUNTY—Gulf's W. H. P. McFadden 1, Moss Bluff, dr 3841 ft hard sand and lime. Humble's Sabine Tram 1, Devers, dr 1570 ft sand and shale. The Texas Co.-Paraffine Oil Co.'s Fee 1, N. Dayton, r 4940 ft. Houtex Prod. Co.'s Brown-Tadlock 1, N. Dayton, bailing after setting screen at 5149 ft; Deering-Wilhite 1, N. Dayton, dr gbo at 2875 ft. Victor Oil Co.'s Gulf Fee 1, N. Dayton, set screen at 4466 ft, washing; Gulf, Fee 2, N. Dayton, dr 4520 ft sand and shale. Gulf's Boyt 4, Hankamer, dr 3550 ft sand and shale; Boyt 6, ru; Lee 1, Hankamer, dr 1275 ft gbo. Tucker et al's Bell 1, Devers, dk. Cranfill-Reynolds Co.'s Esperson 5, Esperson field, dr 4415 ft sticky shale; Esperson 9, dr 4125 ft water sand; Davis 3, cemented cas 2065 ft; Vajdak 1, wo, dr 6450 ft sand and shale. Yount-Lee Oil Co.'s Moores Bluff Corp. 3, Esperson, dr 4095 ft shale and lime. Republic Prod. Co.'s Moores Bluff Corp. 1, Esperson, ru.

MATAGORDA COUNTY—Cockburn et al's Hawkins 1, Shepherds Mott, dr 5423 ft hard sand and shale.

MONTGOMERY COUNTY—Kelly Baker's Juergus 2, 3 mi Conroe, sd 1910 ft.

ORANGE COUNTY—Gulf's W. H. Stark 1, Port Neches, dr 1190 ft gbo. The Texas Co.'s Kuhn 2, Port Neches, dr 2925 ft shale and lime; Stark 2, Port Neches, cored sand and shale with oil show at 3538-44 ft.

VICTORIA COUNTY — Humble's J. J. Welder 1, 3 mi se Nursery, stdg 6200 ft.

WALKER COUNTY—Joyce Richardson et al's Smither 1, 12 mi n Huntsville, dr 3450 ft water sand.

WALLER COUNTY — W. P. Morris & Veihl's Chapman 1, 6 mi n Hempstead, sd 2075 ft. Kirby Pet. Co.'s Davis 2, San Felipe, sd 3000 ft.

WASHINGTON COUNTY—Sun Oil Co.'s Grote 9, Clay Creek, dr 950 ft sand; Jamner 2, dr 1238 ft sand. W. B. Birdwell's Schram 1, 3 mi e Brenham, sd 2100 ft. Mid-Kansas O&G Co.'s Johnke 1, nw part county, sp. W. D. Anderson's Muellar 1, ne Burton, abn 2665 ft shale.

WEST TEXAS

Completions

BORDEN COUNTY—
Phillips Pet. Co. & C. B. Shaffer.. * 3875

GLASSCOCK COUNTY—
F-H-E Oil Co., B. B. Cox 1..... * 3410

PECOS COUNTY—
R. E. Moore et al, Arnold 1 ..... * 2004
Transcontinental-Arkansas Fuel Co., White-Baker 2 ..... * 2111
Tippett 1 ..... * 1805

REAGAN COUNTY—
A. M. Hagan-Emch & Amerada, Sawyer 1 ..... * 2850

ANDREWS COUNTY—Deep Rock Oil Co. et al's A. R. King 1, elev 3206 ft, top salt 1698 ft, show gas 4170 ft, dr lime 4205 ft; B. L. King 1, elev 3196 ft, top salt 1700 ft, dr lime 4085 ft; W. J. Mathis 1, elev 3192 ft, top salt 1730 ft, dr 4000 ft. Fuhrman Pet. Corp.'s Ford 1, elev 3186 ft, ur 1779 ft. Humble O&R Co. & Penn Oil Co.'s Wilson 1, dr 860 ft.

BREWSTER COUNTY—E. L. Chapman et al's Skinner 2, elev 4240 ft, sd 1280 ft. Trans-Pecos O&G Co.'s Jones 1, elev 3073 ft, ur 2290 ft.

COCHRAN COUNTY—R. A. Westbrook & Co.'s Slaughter 1, elev 3793 ft, top salt 2347 ft, top lime 3837 ft, co after recovering tools 5330 ft.

COKE COUNTY—Arkansas Fuel Oil Co. & Dixie Oil Co.'s Stepp 1, sd 1655 ft. Lipan Oil Co. & Vernon O&G Co.'s Lackey-Rawlings 1, sd 3060 ft.

CONCHO COUNTY — Beasley et al's Sam Waring 1, lcn. A. W. Turner et al's Brosig 1, co 750 ft.

CRANE COUNTY—Cranfill Bros. Oil Co. & Gulf Prod. Co.'s Tubbs 1, elev 2526 ft, top salt 505 ft, fsh tools in anhydrite 2420 ft.

CROCKETT COUNTY — California Co.'s Shannon 2, elev 2667 ft, top salt 1025 ft, est 100 bbls oil 2541-64 ft. W. E. Dolman & E. H. Moore's Perner 1, rig. Magnolia's Hoover 1, elev 2412 ft, top salt 660 ft, top lime 1890 ft, dr 3255 ft. Trans-Pecos Oil Co.'s Shannon 2, elev 2647 ft, top salt 1095 ft, dr 2360 ft.

CULBERSON COUNTY — Grisham-Hunter Corp.'s Garren 1, dr 2400 ft. Hickey et al's Finley 1, re-set 3-in cas 2907 ft. W. L. Kornrumpf et al's Garren 1, dr 145 ft.

ECTOR COUNTY — C. P. Davis et al's Hendrick 1, elev 2878 ft, top salt 1640 ft, dr salt 2540 ft. Gibson & Johnson's Scharbauer 1, elev 2986 ft, top salt 1220 ft, top lime 3380 ft, sd 4012 ft. Penn Oil Co. & Devonian Oil Co.'s Goodman 1, rig. Southern Crude Oil Pur. Co.'s Cowden 1, rig. TP Coal & Oil Co.'s McKenzie 1, elev 2933 ft, top salt 1009 ft, top lime 3265 ft, sd for shot with little oil in hole at 3656-3764 ft. Tidal Oil Co. & Independent's Eidson 1, elev 2929 ft, top salt 1020 ft, top lime 3150 ft, sd, small show oil at 3800 ft. H. F. Wurtz et al's Ibbetson 1, sp and sd.

EDWARDS COUNTY—Phillips Pet. Co.'s Holman 2, dr 2725 ft.

EL PASO COUNTY—Lane-Texas Co.'s W. D. Malone 1, sd 1725 ft.

FISHER COUNTY—Cranfill-Reynolds Co.'s Barrett 2, rig; Flannigan 2, rig; Johnson 1, elev 1843 ft, pb from water at 3198 ft to test show oil 3182-83 ft; Willingham 2, dr 2560 ft. Midwest Explo. Co.'s R. M. Decker 1, lcn. Roeser-Pendleton, Inc.'s Steele 1, dk.

GAINES COUNTY — Humble O&R Co.'s Carswell 1, ur 1010 ft.

GARZA COUNTY—H. C. Cate et al's Stoker 1-A, dr 150 ft.

GLASSCOCK COUNTY — California Co.'s Jones 1, reaming 2058 ft. F-H-E Oil Co.'s Sprinkle 1, set cas to test show oil 1377-84 ft. Ed. Timberlake et al's Meek 1, elev 2575 ft, top lime 2670 ft, dr in water 2905-15 ft. World Oil Co.'s Edwards 1, elev 2538 ft, dr 630 ft; McDowell 3-C, elev 2537 ft, lcn.

TOM GREEN COUNTY—Ellis et al's Lewis 3, sd 485 ft. Phillips Pet. Co. et al's Jennings 1, dr 2190 ft. D. W. Wiley et al's Mayer 1, sd 620 ft.

HOWARD COUNTY—Meriwether Oil Co.'s Eva Smith 2590 ft, dr 2540 ft. Owen-Sloan Oil Co.'s Flowers 1, ur cas 2517 ft. Sinclair O&G Co.'s Montgomery 1, dr 1180 ft.

HUDSPETH COUNTY — California Co.'s University 1, elev 5109 ft, dr hard gray lime 4555 ft.

IRION COUNTY — Carl Cromwell et al's

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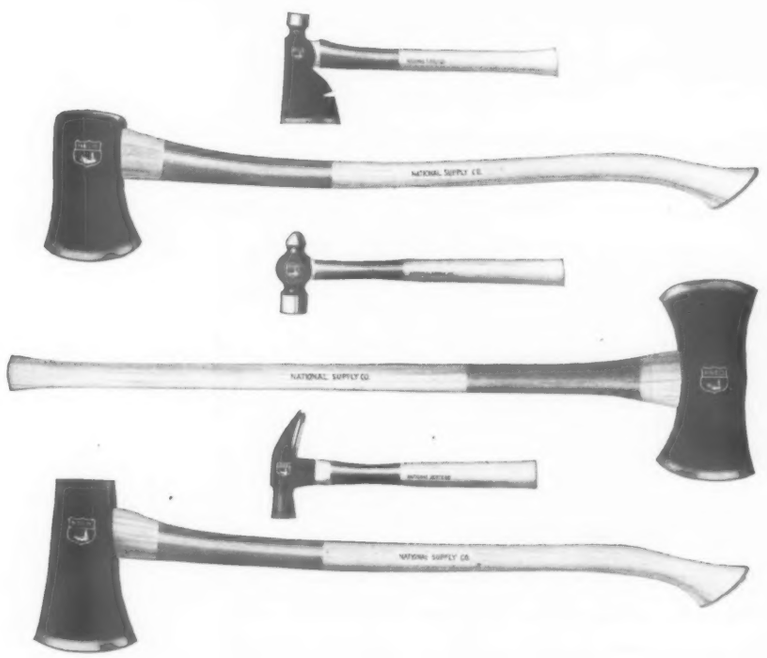

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JONES COUNTY — Mid-Tex O&G Co.'s King 1, showing oil, td 1976 ft. Phillips Pet. Co.'s Teoff 1, rig.

LOVING COUNTY—California Co.'s Allen 1, elev 2370 ft, top salt 771 ft, dr lime 4240 ft; Reagan 1, elev 2725 ft, top salt 771 ft, dr 4050 ft. Dixie Oil Co. & Phillips Pet. Co.'s W. D. Johnson 1, set 15½-in cas 275 ft. Hadlock et al's Russell 2-A, rig. L. E. Lockhart et al's Wheat-Ramsey 1, elev 2689 ft, top salt 725 ft, dr 3650 ft. Lockhart & Co.'s Bowen-Wells 3, elev 2719 ft, top salt 763 ft, sd 3385 ft; Hubbard 6, rig; Lepp 2, sp and sd. Miller-Burge & Healy's N. F. Chapman 1, rig. Joe Rush et al's Jim Wheat 1, dk.

MENARD COUNTY—L. G. Priest et al's J. P. Sorrells 1, ur 10-in cas 1735 ft.

MIDLAND COUNTY—Pure Oil Co.'s J. E. Hutt 1-A, set 12½-in cas 1010 ft.

PECOS COUNTY—Alexander-Lyles-Eastland Oil Co.'s Sellman 1, sd 1856 ft. M. H. Black & Dittman Drlg. Co.'s Pecos Valley 2, elev 2431 ft, dr 1575 ft. California Co.'s Iowa-Jasper 1, elev 2433 ft, top salt 1205 ft, dr 1440 ft. E. L. Chapman et al's Streety 1, elev 2653 ft, sd 2200 ft. Cromwell-Tanner & Ellis' University 1, elev 2485 ft, top salt 955 ft, dr 1890 ft. Crosby Prod. & Roy. Co.'s Cordova 1, elev 2320 ft, top salt 725 ft, show gas and cas collapsed, td 2080 ft. Fisher & Lowrie's Webb 1, ur 775 ft. Humble O&R Co.'s H. L. Kokernot 1, bad hole 110 ft. Hussman Oil Co.'s Estes 1, fsh 1675 ft. Independent O&G Co. & Buell-Hagan's Jasper 1, estimated 10 mil ft gas 1518-65 ft. C. S. Messinger et al's Byrne 1, set cas 1110 ft. J. R. Miller et al's Bennett 1, sp and sd. J. D. O'Mara et al's Bennett 1, dr with show oil at 1089-1138 ft. Perren et al's Eaton 2, dr 765 ft. Phillips Pet. Co.'s Shearer 1, elev 2426 ft, show oil 1215-20 ft and 1384-95 ft, dr 1560 ft. R. W. Porpus et al's State 1, sp and sd. Rector Oil Co.'s Young 1, elev 2380 ft, top salt 635 ft, dr 2400 ft. Riser & White's W. D. Riser 1, lcn. Sides & Cloyd's Blackstone-Slaughter 1, top salt 860 ft, sd 1725 ft. The Texas Co.'s Wright 1, top salt 1940 ft, dr 2645 ft. Trees Oil Co.'s Trees 3, elev 2518 ft, dr 2300 ft. Transcontinental's University 1, elev 2552 ft, top lime 1035 ft, bad hole 4910 ft. Transcontinental-Arkansas Fuel Oil Co.'s White-Baker 3, dr 1675 ft; M. Sellman 1-A, dr 1550 ft. W. F. Walsh et al's Henderson 1, elev 3325 ft, fsh 1640 ft. Walsh-Sturm & Keller's Shearer 1, machine. Monte Warner et al's R. D. Webb 1, lcn.

PRESIDIO COUNTY—L. C. Brite Prod. Co.'s Brite 4, sd in lava 1635 ft.

REAGAN COUNTY—Big Lake Oil Co.'s University 179, cem cave 2920 ft; University 1-C, fsh drill stem and core barrel 8658 ft; University 2-C, flow 554 bbls oil and 12,359,000 ft gas at 8232 ft; University 3-C, flowed 91 bbls oil and 2,217,000 ft gas 8576 ft; University 4-C, flow 111 bbls oil and 4,699,000 ft gas, td 8220 ft; University 5-C, rig. Group One Oil Corp.'s University 2-B, ream shale and broken lime 8300 ft; University 3-B, dr 7525 ft. Kemrow Co.'s Sawyer 1, sp.

REEVES COUNTY—California Co.'s Kloh 1, dr 615 ft. Slack & Fink's Brooks-Huling 1, elev 3116 ft, sd showing O&G, td 1860 ft.

RUNNELS COUNTY—Geo. W. Boyce & Lamar's Lange 1, elev 1844 ft, sd 2504 ft. Gibson & Johnson's Johnson 1, sd 2400 ft.

SCHLEICHER COUNTY—Delmar Oil Co.'s O'Harrow 1, ur 3330 ft. Phillips Pet. Co.'s J. A. Whitten 1, elev 2333 ft, salt water 6210-20 ft, dr 6245 ft. Munger-Wilson Oil Co.'s Page 1, elev 2270 ft, cem cave 4750 ft. Paul Teas & Walter Gant's Allison 1, dr 630 ft. J. D. Wesner et al's Ratliff 1, lcn.

SCURRY COUNTY—J. G. Armand & Camp Springs O&R Co.'s Quinn 1-A, elev 2316 ft, sd 4140 ft. Byrd & Harmon's Murphy 1, showing oil, fsh 2442 ft. Pender O&G Co.'s Davis 1, show gas 4365-70 ft, ur cas 4400 ft. Transcontinental & Vacuum's Peckham 1, elev 2155 ft, co 875 ft.

TAYLOR COUNTY — Condor Pet. Co.'s Stoker 1, fsh 2580 ft. A. H. Gibson et al's Cody 1, co after shot 60 qts at 2374-93 ft, td 2467 ft. J. B. Jameson et al's Webb 1, elev 1905 ft, dr 5890 ft. H. B. Herring-Hucony Gas Co. & Cordova Union's Richie 1, dr 530 ft. Owen-Sloan Oil Co. & Gibson-Johnson's Bingham 1, est 15 bbls oil 2095-2100 ft, dr 2105 ft. Mid-Continent Pet. Corp.'s Lindsey 1, dr 2160 ft.

TERRELL COUNTY—Big Bend Oil Corp. & F. A. Book's Bassett 1, elev 2396 ft, sd 1840 ft. Transcontinental's Good 1, elev 2405 ft, cem cas 3093 ft.

TERRY COUNTY — Penn Oil Co. Unit Plan's P. Carlisle 1, elev 3275 ft, top salt 2260 ft, sd for std rig, td 3322 ft.

VAL VERDE COUNTY — O. O. Owen's Mills 1, dr by junk 5757 ft. Phantom Oil Co.'s Ingram 1, fsh 3035 ft.

WARD COUNTY—E. J. Anderson et al's Boogher-Merritt 1, top salt 825 ft, dr 2040 ft. C. C. Dearborn & Otto Kirkham's Boogher 1, top salt 840 ft, dr 1785 ft. Gulf Prod. Co.'s Hutchings 4, ur 10-in cas 940 ft; O'Brien 8, flow 34.1 gravity oil by heads at 2592-95 ft; O'Brien 9, top salt 1205 ft, dr 1270 ft. R. F. Owen et al's Johnson 1, sd 380 ft. Sid Richardson-Kelsey & Magnolia's O'Brien 2, top salt 1150 ft, dr 2400 ft. Shipley Oil Corp.'s Hayzlett 4, fsh with 2300 ft oil in hole after shot 60 qts at 2940-70 ft, td 3127 ft; Monroe 1-A, dr 380 ft. J. E. Smith et al's Clements 1, top salt 745 ft, dr 1090 ft. Sturm & Paine's Cummins 1, elev 2443 ft, top salt 780 ft, sd 2350 ft. Sun Oil Co.'s Sealy 1, elev 2680 ft, sd 2590 ft. Tex-Oil Production Co.'s Redman 1-A, elev 2717 ft, top salt 1290 to 4133 ft, dr grey lime 4945 ft.

WINKLER COUNTY — Champion-Winkler Oil Corp.'s Campbell 1, small show oil and gas after shot, td 3735 ft.

SOUTHWEST TEXAS

ATASCOSA COUNTY—Frontier Oil Co.'s Gray 1, (3½ mi south Somerset field) dr about 1850 ft.

BASTROP COUNTY — Abernathy et al's (Pacific Oil and Gas Co.) Spooner 2, dr 900 ft. Boots et al's Alexander 1, dr 1560 ft. Superior Oil Co.'s Moore 1 (Glasscock survey) sd abt 3600 ft.

BANDERA COUNTY—Sun Oil Co.'s Wisenhaunt 1, (sec 69) 500 ft from east line, 900 ft from south line, ru.

BEXAR COUNTY — Penn-Tex Oil Co.'s Sandemeyer 1, (150 ft from e line, 150 ft from n line, 107 acre tract in Manchaca survey, 9 mi southeast of San Antonio) sp in. Burton

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Formerly Assistant Examiner
United States Patent Office
Andrews, Streetman, Logue & Mobley
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BEE COUNTY—Humble's McKinney 3, (600 ft south of No. 2) dk. Union Producing Co.'s Ray 8 (600 ft sw McKinney 2) prod 845 bbls on choke; set csg at 3964 ft oil sand at 3980 ft; Ray 9, (600 ft south of No. 8) lcn; Ray 10 (450 ft so Morgan No. 1 McKinney) lcn; Ray 11, dk. Houston Oil Co.'s Pettus 1, town (center blk 36) dk. Ed Price's Weiss 1, (2640 ft out of north center of tract) coring 3767 ft. Fisher and Wiggins (Grayburg Oil Co.) Kimball 1 (center of tract) dr 3220 ft in shale. Nichols et al's Hicks 2 (300 ft se of No. 1) dr 3460 ft. Cosden Oil Co.'s McKinney 1, (John Pace sur) showing oil at 3655-67 ft. Rowan and Tongs' Freeland 1, 150 ft sel center of tract) coring 3767 ft.

BROOKS COUNTY — Humble's Singer 2, sec 312, sp in. Houston Oil Co.'s Honbein-Wormser 1, excellent gas showing at 6003 ft; 800 lbs pressure, plugging back to 3800 ft.. Holbein-Wormser 2, (Saenz part of Palo Blanco de Maguellas grant) lcn. Midwest Public Utilities' Garcia 1, dr.

CALDWELL COUNTY — Morgan et al's Perry 1 (¾ mi ne Salt Flat field) dr 2740 ft. Trinity Drillers' McMullen, dr 3112 ft.

DE WITT COUNTY—Roe et al's Reinhardt 1, dr at 2324 ft. Republic Prod. Co.'s T. E. Clark 1, (4 mi so of Yorktown) dr 2340 ft. Louisiana Oil Ref. Co.'s Klanerman 1, (400 ft s of n line 460 ft w of e line of 101 acre tract in R. Galletty league) prep to sp in.

DUVAL COUNTY—Bain and Miller's Benavides 1, sec 173, dr 1943 ft. Callahan, Howard and Smith's Luby 1, sec 24 showed fresh water at 1636 ft, now dr at 1908 ft. Cole Pet. Co.'s Benavides 68, blk 11, sec 14, dr at 3961 ft. Humble's Koehler 44, sec 424, dr; Koehler 45, ru. Simms' Dinn 9, dr. Southern Oil Co.'s Welder Wood 1, sec 215, dr at 1856 ft. Southern Crude Oil Purchasing Co.'s Dunn 1, sec 480, dr 3220 ft.

FAYETTE COUNTY — Mouldon Oil Co.'s Kerr 1, dr about 3280 ft.

FRIO COUNTY—Dr. F. L. Thompson's Trebble 1, dr below 3590 ft.

GONZALES COUNTY—Antibus and Cummins' Martin 1, (8 mi from Gonzales) dr about 2310 ft. Acme Oil and Royalty Co.'s Weber 1, sd around 2400 ft. Fitzsimmons and Perrinot

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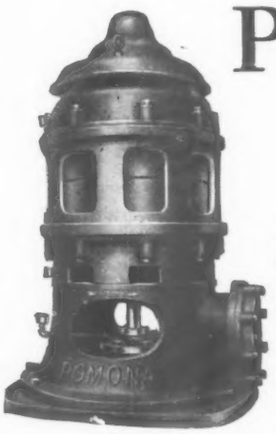

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et al's Huber 1, dr 330 ft. Keiffer et al's B. B. Dix 1, dr 2850 ft. Lake and Thompson's Campbell 1, (in Saturn area) mv on. Mouldon Oil Co.'s Robinson 2, dr 1900 ft.

GOLIAD COUNTY—Humble's Lackey and Weldon 1, (2000 ft sel) showed salt water at 3941-51 ft, elevation 380 ft, sd for orders. Zock et al's Pereira 1, (150 ft out of nw corner of blk 14, V. Ramos survey) set surface csg at 450 ft.

GUADALUPE COUNTY — Fowler et al's Blumbers 1 (1½ mi w McQueeney) dr. Grayburg Oil Co.'s Wells 2 (1425 ft se No. 1) prep to sp in. Morgan Lewis et al's Link 1 (7 mi nw Seguin) dr. Mid-Kansas Oil and Gas Co.'s J. J. Waldrop 2, (about 1000 ft se of No. 1) dk. Mag. Pet. Co.'s A. A. J. Manford 1, (2 mi west of Penn pool) dr 2260 ft; Klein 2, sp in. F. W. Patton, Trustee's Fred Warren 1, sd abt 2950 ft. Penn-Tex Oil Co.'s Roamel 1, J. Robinson survey (1300 ft west of Roamel gusher) sp in. Sun Oil Co.'s J. C. Manford 2 (direct east offset to No. 1) swabbing at 2550 ft, csg set at 2496 ft. Tidal Oil Co.'s Seligman 1, (H. J. Williamson survey) dr about 300 ft.

KENDALL COUNTY—Borget et al's Willie Haag 1, set csg around 750 ft. Dixon et al's Behr 1, (3 mi se Sisterdale) dr below 1300 ft. Dickson and Morrison's Edmondson 1, dr 120 ft. Seaboard Oil Co.'s Askey 1, (3 mi n Sisterdale) dr 1180 ft. Sinton Oil Co.'s Garvin 1, sd at 400 ft. Perkins et al's 1, moving on.

KINNEY COUNTY—Blume et al's Herbst 2, dr. Mag Pet. Co.'s Wardlow 1, (Blaez survey) sp in.

LIVE OAK COUNTY—Houston Oil Co.'s Booth 1, dr 2750 ft; Cartwright 22, lcn. Dougherty et al's Fee 1, (2254 ft nwl, 750 ft swl M. Borden survey) ready to sp in.

MEDINA COUNTY—Donaldson Oil Co.'s Adams 2, dr below 100 ft. National Oil Co.'s Howard 1 (John George survey) sp in. Pearson Oil Co.'s Irrigation 5, working on well at 930 ft. Pat Armstrong's Crawford 1, dr about 450 ft; Butts 1, dr 1412 ft. Pan-American Petroleum Co.'s Hart 1, dr 1140 ft. Pure Oil Co.'s John 1, dr below 1800 ft. Sunflower Oil Corp.'s Morfield 1, (1335 ft n of s line, 2240 ft w of e line, sec 532 J. Brothax survey, 10 mi south of Hondo) ru.

LAVACA COUNTY — McElreath and Suggest's Heinson 1, dr 3750 ft.

SAN PATRICIO COUNTY—Geo. Pickett's J. C. Baldwin 1, (95½ mi e Sinton) dr below 1942 ft. LaFeria Oil and Gas Co.'s C. C. Smith 1, dr 3015 ft.

STARR COUNTY—Texas Company's Guerra 1-B, dr 3610 ft.

UVALDE COUNTY — Welch et al's Edmonds 1 (sw Uvalde) sd 1000 ft; Benson 1, (nw Uvalde) dr 1200 ft. Phantom Oil Co.'s Caludt 1 (New Mantell) underreaming csg at 1700 ft.

VAL VERDE COUNTY—A. Blume's J. P. Yoas 1, blk 3, sec 31, ru.

VICTORIA COUNTY—Lion Oil Co.'s McFadden 1, dr 1460 ft.

WEBB COUNTY—Houston Oil Co.'s Benavides 2-D, dr. French Oil Co.'s Rosa Benavides 1, dr testing at 2344 ft. O. W. Killam's Bruni 18, sec 9, dr 3875 ft; Bruni 1-V, blk 22, Albercas grant, dr 2850 ft. W. E. May's 1, sec 22, lcn. South Texas Production Co.'s Fansler 1, set surface csg.

ZAPATA COUNTY—Charles Alworth's sec 149, s of gasser in sec 285, lcn; Garza 1, sec 3, dr 1020 ft. Blankenship et al's Garza 2, standing at 1650 ft. W. R. Duke's Martinez 2, standing at 973 ft. O. W. Killam's Cuellar 17, prod 1000 bbls at 1481 ft; Cuellar 16-C, set csg at 1634 ft; Cuellar 23, dr 2300 ft; Cuellar 22, dr 1470 ft; Cuellar 17-B, lcn; Cuellar 18-B, lcn; Cuellar 24, lcn; Cuellar 25, lcn. Mag. Pet. Co.'s Cuellar 3, sec 245 dr 3960 ft. Livingston and Twiss' Treving 1, blk 7, sec 66, dr 1270 ft. Muckleroy's Trevino 3, dr. Midwest Utilities' Guttirez 1, blk 8, lot 5, prep to sp in. Shankle's Cuellar 1, sec 65 of Escobas field, dr 1000 ft. Trinity Drillers' Cuellar 1, sec 65, dk; Trevino 1, sec 66, lcn.

ZAVALLA COUNTY—Anglin Oil and Gas Co.'s Pryor 4, (11 mi sw of Uvalde) sp in; State 1, (Col. Pryor ranch) waiting on cement at 1100 ft, showing of oil. Cribbs and Davidson's Callifut 1, dr. Carl G. Cromwell's Whitecotton 1, (nw corner of ranch) lcn. Southern Crude Oil Co.'s Washer 1, dr below 4000 ft. Wiegand Bros.' Gates 1, (near Loma Vista), dr around 2316 ft.

Keep away from Crooked Holes!

SYFO CLINOGRAPH

The perfect device for the daily recording of vertical deviation in drilling

Permanent Records · · · Quickly made · · · No danger · · ·

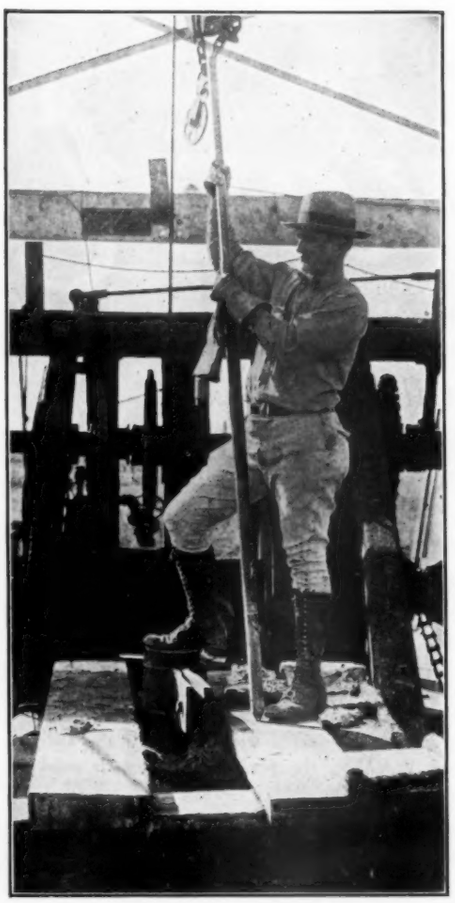
Inexpensive · · · Direct and Accurate · · · · · · · · · · · · · ·

PRODUCERS everywhere have come to recognize the costly results of the crooked hole. Today the virtue of less haste—more speed is finding more favor. For crooked holes are costly things, too often resulting in bad twist-offs of drill pipe and casing failures. They are undoubtedly the cause of a great many complicated fishing jobs, increasing the time necessary to complete the contract.

Recognition that careful drilling can obviate much of the deviation from the vertical in drilling, has caused several devices to come on the market to guard the driller against getting off the vertical. Most common of these devices is the Acid Bottle—dangerous to handle, slow and rather unsatisfactory in result. Other devices have followed, but not until the Sperry-Sun Well Surveying Company perfected the SYFO Clinograph can the problem said to have been solved in a way to satisfy the driller and producer.

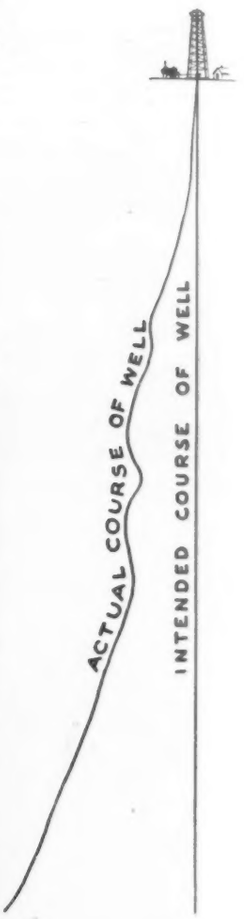
The operation of the SYFO is simple, the results obtained of great accuracy and can be read directly without computations. Being on paper these records can be filed for reference. A SYFO test is quick and the service most reasonable in cost.

The SYFO Clinograph represents a radical improvement in the design and method of operation of an inclination measuring instrument. Its advantages may be summarized as follows: It affords a *direct and accurate record.* The record is *easily obtained* without the use *of dangerous acids.* The test is *quickly* made. The record is on *paper* and can be *filed* for reference. *Ruggedly* built and will operate without decrease in efficiency. Operates on wire line running through the drill stem, or on sand or bailing line in open hole.



Running in a SYFO Clinograph takes very little time and the result can be read immediately.

The SYFO Clinograph is not sold, but leased at nominal rates. Being made in different sizes for different depths, it is necessary for the drilling company to advise the conditions under which the surveying will be done before quotation can be made.



Crooked holes involve many extra costs of drilling and operation in addition to the possibility of drifting out of pay sand.

Many operators are writing into their drilling contracts fixed limits from the vertical before accepting the completed well from the contractor. Record sheets from SYFO Clinograph tests should be used as evidence.

WRITE FOR COMPLETE DESCRIPTIVE LITERATURE

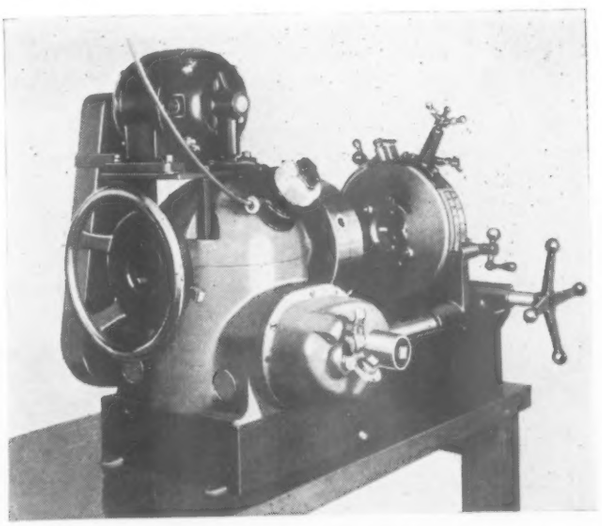
SPERRY-SUN WELL SURVEYING CO.

Main Office - 1608 Walnut Street

DALLAS PHILADELPHIA, PA. TULSA

New Equipment for the Field

Machinery - Tools - Catalogs - Books



Oster Improved Bench-Type Grinder

New Motor On Oster Machines

OSTER MANUFACTURING COMPANY

Oster Manufacturing Company, Cleveland, Ohio, is now equipping all Willie-Williams portable power threaders with domestic electric universal motors formerly used only on the Oster power boy threader.

Manufacture and application of this new motor is to speed up production of the machine and to eliminate any tendency toward stalling, the speed of the motor being in direct proportion to the pull on the dies.

Simultaneously with this announcement, is the statement by Oster-Williams Manufacturing Company that the Willie-Williams may be furnished now in either the bench type or pedestal type. This allows the same power as formerly had and adds portability.

Among the other features of the Willie-Williams are the built-in cutting-off, reaming and chamfering tools, the built-in quick-opening die head to eliminate backing off, the geared oil pump and the two powerful chucks—one a heavy gripping chuck and the other a self-centering universal chuck.

Both the bench type and pedestal type machines will thread, cut, ream and chamfer all sizes of pipe from one-quarter-inch to two-inch.

American Chain Company has just issued an attractive folder giving specifications and complete information on Acco electric welded steel loading chain. This particular type of chain is especially adapted to the severe service that is found in the oil fields where maximum strength with minimum weight is essential.

International Machine Tool Company, Indianapolis, Indiana, has published literature covering Libby International turret lathes, including an eight-page bulletin for insertion in a loose-leaf catalog, and two folders. Illustration descriptions of each individual type manufactured are used, and will be mailed to interested persons upon request to the headquarter office.

Swivel

OIL WELL SUPPLY COMPANY

Oil Well Supply Company has introduced the Imperial No. 150 swivel, designed and constructed to meet the demands of continued deeper drilling. It is built for the job in excess of 10,000 feet.

The housing provides an oilbath of 10½ gallons capacity. All bearings work in this bath of circulating oil. The bearings are oversized. The main thrust bearing is a Timken bearing with a capacity of 185 tons at 100 r.p.m. The upper thrust or auxiliary bearing, also Timken, is to absorb shocks or upper thrusts of the swivel body. This bearing has a thrust capacity of 20 tons at 100 r.p.m. and is adjustable from the outside of the swivel.

The radial thrust bearing is a heavy duty American bearing of 40 tons capacity at 100 r.p.m. and absorbs the radial thrust due to the whipping motion of the drill stem, to prevent undue wear on the stuffing boxes and packing.

All stuffing boxes are deep and outside packed, and have bolted glands, eliminating threads which cut and shorten the life of the packing. The water tube stuffing box is especially deep. The body is bored from a solid forging. The flanged water tube is also bored from a single forging, and is pack-hardened, ground and polished to reduce wear on the packing to a minimum.

A heavy 4 inch bail, reinforced to 5 inches in diameter at the loop, is forged closed over the 6 inch trunnions. Subsequent spreading of the bail is prevented by steel bail guard plates. The trunnions and two sets of bail rests for hanging the bail at angles of either 45-degrees above or 45-degrees below the trunnion, are cast integral with the housing.

There are only two main assemblies in the Imperial No. 150—housing and cap. All parts are inserted through the top of the housing, to make dismantling or assembling as simple as possible. Absolutely no weight is carried by bolts. The possibility of mud getting into the oilbath is eliminated by a shield which protects the upper stuffing box.

In a recent factory test in which especially designed testing apparatus was used, and in which actual drilling conditions were approximated, the Imperial No. 150 Swivel was subjected to loads as great as 332,000 pounds and speeds as high as 100 r.p.m., rotated day and night continuously for a period approximating 40 days of drilling time, loads and speeds greater than normally found in the fields for long continuous periods were imposed on the swivel. At no time was the test stopped to make adjustments of any part of the swivel.

The normal rated capacity of the Imperial No. 150 rotary swivel is 150 tons to 100 r.p.m.

NEW EQUIPMENT FOR THE FIELD

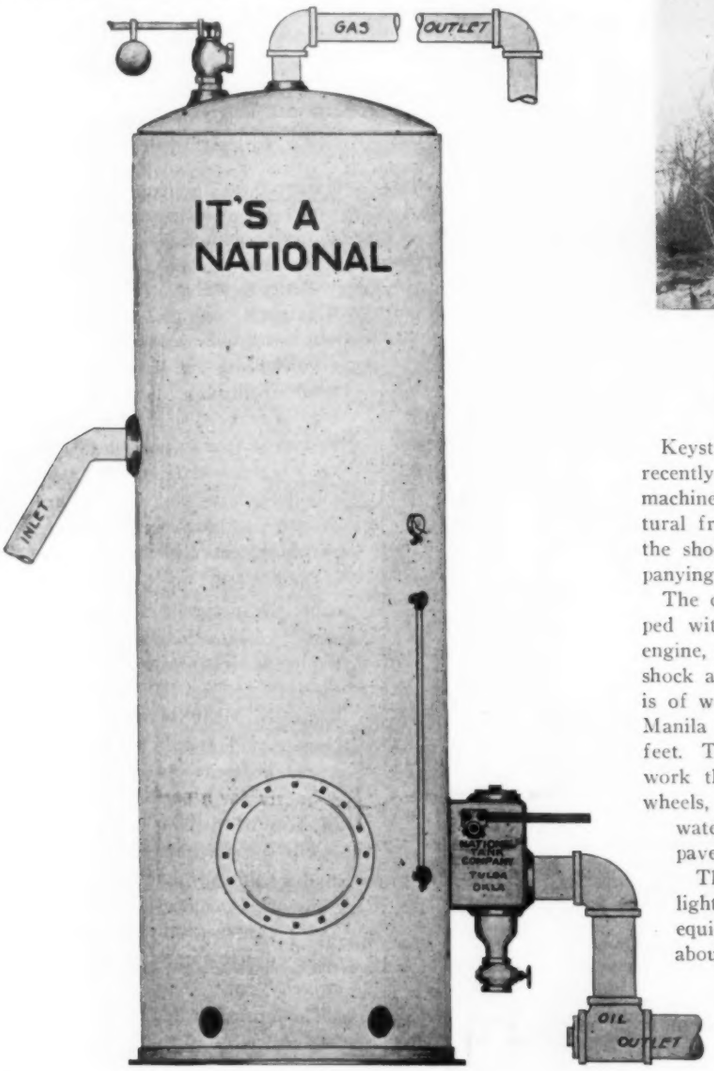
Separator

NATIONAL TANK COMPANY

National Tank Company, Tulsa, announces the new Type "C" National oil and gas separator, designed particularly for use on small producing wells. The outstanding feature of this new separator is the simplicity in construction and operation. No equipment has been used which requires sensitive adjustment, the aim being to eliminate servicing after it has been moved from one location to another.

It has been built as a self-contained unit for ease of handling and to make installation simple. Number C-1 is 19 by 72 inches with a steady flow capacity of 1000 barrels of oil and 500,000 cubic feet of gas, stands a working pressure of 125 pounds with a test pressure of 200 pounds and weighs 600 pounds. Number C-2 is 30 by 96 inches, with a steady flow capacity of 2000 barrels of oil and 1,500,000 feet of gas, weighs 650 pounds, and has the same pressure capacity as No. C-1. Number C-5 is three by 10 feet, has a steady flow capacity of 3000 barrels of oil and 2,500,000 feet of gas, has the same pressure rating and weighs 1100 pounds.

More Detailed information will be supplied by National Tank Company's Tulsa office upon request.



New National Separator

McGraw-Hill Book Company, Inc., 370 Seventh avenue, New York, has just issued "Piping Handbook," by J. H. Walker, superintendent of Central Heating, the Detroit Edison Company, and Sabin Crocker, also of the Detroit Edison Company. Price is $5.

This book makes available a comprehensive collection of authoritative data for the engineer interested in piping work in modern power plants, in distributing systems and in other industrial operations. Many sources have been drawn upon freely in order to assemble and coordinate all appropriate material.

Certain specialized subjects include: heat insulation, water-supply piping, oil piping, and gas piping. These subjects have been prepared by contributors recognized as authorities in their respective fields. And many helpful definitions, formulas and tables are included.

Traction Blast Hole Drill

Improved Drilling Machines

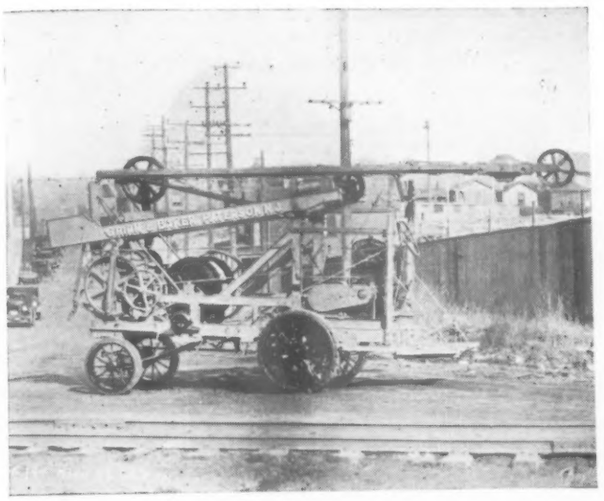
KEYSTONE DRILLING COMPANY

Keystone Driller Company, Beaver Falls, Pennsylvania, has recently introduced a number of improvements on its drilling machines, including especially the development of all steel structural frame and the development of dual cushions for taking the shock out of the operation with wire lines. The accompanying photographs show two types of machines.

The close-up view is the No. 3½ Keystone spudder, equipped with a 35 horsepower, cross-mounted, four-cylinder gas engine, rubber tired road wheels and the dual rubber cushion shock absorbers for operation with wire lines. This machine is of wood frame construction. It has a depth capacity with Manila cable of about 400 feet and with wire line about 800 feet. The machine is adapted for blast hole drilling. In rough work the machine would be equipped with plain iron tired wheels, or half crawler apron wheels. For the use of the water well contractor, making rapid and long moves over paved roads, the rubber tired wheels are recommended.

The illustration showing the machine on the job is the lighter machine, the No. 1½, all steel construction, but equipped for use with Manila cable. This machine weighs about 10,500 pounds. It is equipped with rubber tired wheels for rapid movement, and has a traction speed of about eight miles per hour. It is furnished with dual cushion shock absorbers when it is desired to operate it with wire lines. It has a 20 horsepower, four-cylinder cross-mounted engine and handles conveniently a 1600-

NEW EQUIPMENT FOR THE FIELD



Keystone Traction Driller for use with wire drilling cable

pound drilling tool. Its drum will spool about the same amount of Manila rope and wire line as in the case of the No. 3½ machine.

As far as depth capacity is concerned, the two machines are described as being equal, but the larger outfit handles heavier tools and drills more rapidly. Both of the machines are furnished with plain non-traction iron wheel mounting for operation in districts where roads are unpaved or where it is desired to move the machines from place to place by means of tractors or draught animals.

Detailed information of these improved machines will be mailed by the company upon request to the Beaver Falls headquarters.

New Multi Seal Coupling

S. V. DILLON

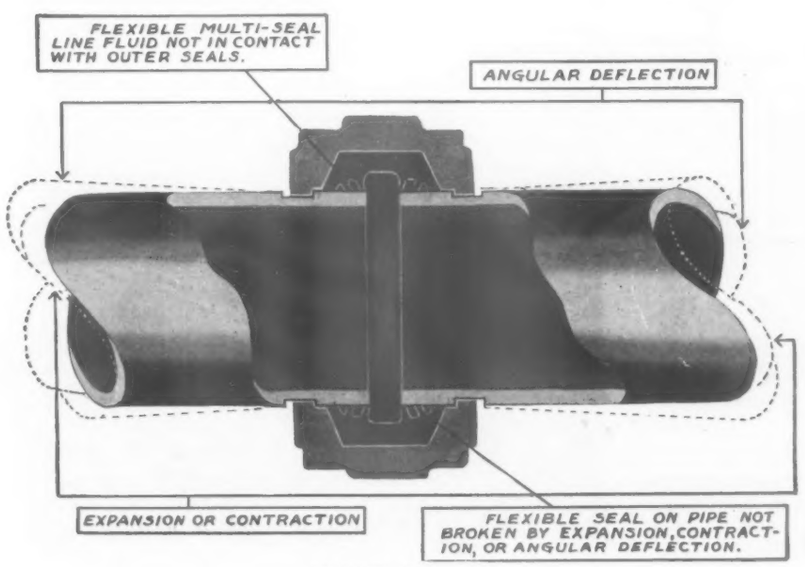
S. V. Dillon, designing engineer, of Tulsa, has developed a new multi-seal coupling for pipe line construction, using a short line of six-inch standard grooved pipe with two certified malleable and two steel drop forged coupling housings.

The primary object of the invention is to provide a novel packing ring for use with such couplings. Another object is to provide a packing ring having a plurality of independent seals at each edge so that in case one seal is attacked by the oil or gas, or other fluids containing substances which attack the packing ring, another one of the seals can effectively prevent leakage, and also retain its resiliency, because it is segregated from the attacked seal.

The packing ring has its edges turned inwardly toward the axis of the ring, and each edge terminates in inwardly extending spaced annular projections designed to grip the outer surface of a pipe along a plurality of spaced circumferential lines.

Between these projections the ring is grooved in annular form, so that a vacuum chamber is formed between the projections and the pipe end, which will tend to maintain the seal and hold the ends of the pipes together and allow the pipes to expand and contract, or to assume positions out of axial alignment with each other without affecting the seal. The annular web of the ring which joins the edge portions of the ring being thinner than the edge portions, functions as a hinge to allow dis-alignment of the pipes without breaking such vacuum or affecting the seal.

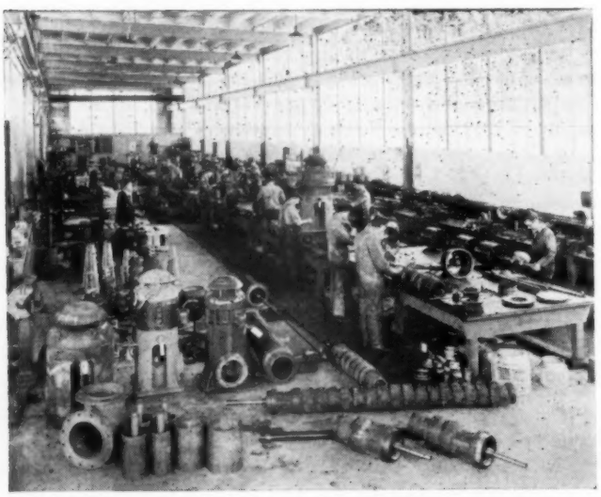
A further object is to furnish a pipe coupling which will withstand without leakage, shocks such as caused by internal disturbances within the earth. The present coupling will also withstand without leakage, disturbances due to wave motion, where the pipe line is under water, and can also receive without leakage, shocks caused by vehicles running over the pipe line, where such pipe line is layed along the ground surface. Furthermore, the construction is such that the coupling may be assembled and installed by unskilled labor, and will provide an effective joint when so assembled and installed.


FLEXIBLE MULTI-SEAL LINE FLUID NOT IN CONTACT WITH OUTER SEALS.
ANGULAR DEFLECTION
EXPANSION OR CONTRACTION
FLEXIBLE SEAL ON PIPE NOT BROKEN BY EXPANSION, CONTRACTION, OR ANGULAR DEFLECTION.

Multi-Seal Coupling

H. O. Swoboda, Inc., electrical and mechanical engineers, specializing in industrial electric heating equipment, 3400 Forbes Street, Oakland Station, Pittsburgh, has just issued Bulletin No. 190, titled "Falcon," which describes in detail the design, construction and operation of the "Falcon" straight line continuous electric furnaces for heat treating strip metal and wire. These furnaces are for shop use. The solid frame, Type F, is used for all lengths up to nine feet. The split frame, Type F, is used for all lengths from 10 to 20 feet. Maximum permissible temperature for heat treating is 1750°F. Widths of strips to be heat treated range from one to six inches and the maximum thickness of the strip is 0.050-inch. Automatic control is by pyrometer through relay and magnetic contactor, enclosed in sheet metal cabinet. Electric service is as follows: 115, 230, or 440 volt, 60 or 25 cycle, single or three phase alternating current. A copy of this bulletin will be mailed upon request to the address shown above. Other available bulletins of this company are: Bulletin No. 160, on electrically heated large asphaltum coating tanks, and Bulletin No. 170, on electrically heated compound melting tanks.

Manufacturer and Supply Dealer Notes



Interior of Byron Jackson Berkeley plant

BYRON JACKSON IN NEW BERKELEY PLANT

Regarded as one of the best equipped and most modern industrial plants in the West, a new building recently was occupied by the Deepwell turbine unit of the Byron Jackson pump division at Berkeley, California.

The structure of brick, steel and glass, provides the enlarged quarters which were made necessary by the steadily increasing production demands, and contains facilities calculated to maintain a maximum of efficiency in assembly and shipment.

Much careful study and planning was devoted to the various features embodied in the new plant. Along the wall on one side, is the "pump and built-in head assembly section," with 125 feet of specially designed benches, equipped with necessary tools. In front of the benches are eight 6x12 metal covered assembling tables. Traveling over the section is a two-ton crane operated from the floor.

The main section is used for storage and handling of incoming and outgoing materials. Everything for the Deepwell turbine is stored there, including rotors and stators. Lost motion is kept to a minimum through the highly developed system used for the storage of parts, which are readily accessible.

Over this main section there is a five-ton floor operated crane so designed that it can be run out of the building and over the adjoining railroad tracks, and trucks also may drive all the way through the section.

The design of the building permits the addition of a 30-foot wing and an extension in the rear when these become necessary. The present size is 70x180 feet and this will ultimately be enlarged to 100x275 feet.

Another evidence of Byron Jackson activity has been provided by the recent placing of large orders for new tools in the machine shops, some of which are already being installed. Among the more important features of the new shop equipment are one 54-inch Bullard vertical lathe; one seven-foot Carlton radial drill press; two 4B Universal Gisholts turret lathes; two 14-inch x eight feet Rockford geared head engine lathes; one No. 50 Giddings & Lewis horizontal boring mill; a 30-inch x 12-foot type D Monarch engine lathe; a 24-inch x 18-foot double carriage Monarch engine lathe; a 14-inch x 120-inch Norton grinder; and a No. 3 16-foot bed South Bend drum lathe.

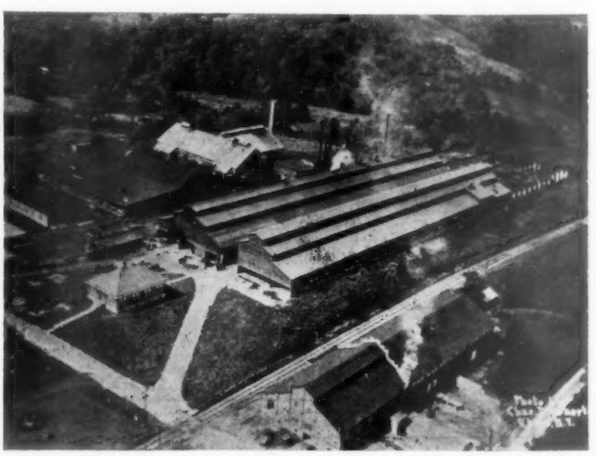
IDECO ACQUIRES LEIDECKER

Announcement has just been made by Harry M. Runkle, president, International Derrick & Equipment Company, Columbus, Ohio, of the purchase of Leidecker Tool Company, Marietta, Ohio, which adds another important production link to the nation-wide group of manufacturing plants owned and operated by this company.

Leidecker Tool Company is one of the largest and oldest drilling and fishing tool manufacturers in the oil industry. It has been recognized as one of the leaders in the supply business of this country for many years. It was organized in 1891 by J. J. Leidecker and his associates, one of whom was W. B. Hayes, former oil man and mayor of Pittsburgh, and J. T. Braden, deceased, first president of Hope Natural Gas Company and of Oklahoma Natural Gas Company. Its growth has been rapid. The main plant is located at Marietta, with branch stores and shops at Bartlesville, Oklahoma, and Bason and Casper, Wyoming. In addition to the manufacture of a complete line of drilling and fishing tools for oil, gas and artesian wells, the company also manufacturers a complete line of drilling machines, boilers and fittings, steam drilling engines and other similar equipment. It is the intention of the purchasing company to continue the manufacture of this material and also to use the plant as an eastern source for its heavy oil well machinery business.

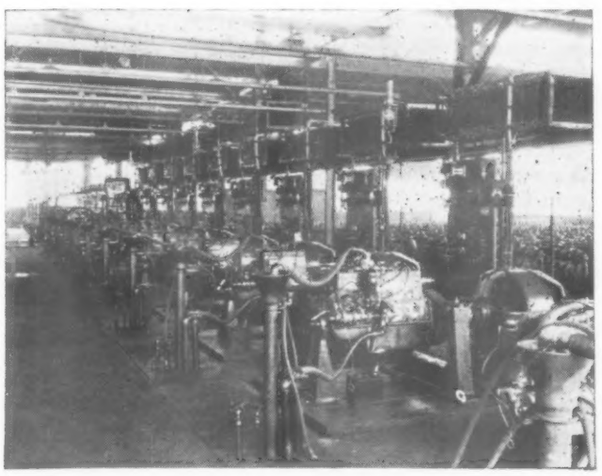
According to Mr. Runkle, the plan is to remain in Marietta and the present organization retained. For the present it will continue to operate under the name of Leidecker Tool Company but back of this organization will be placed the entire sales and distribution resources of International Derrick & Equipment Company.

The headquarters of International Derrick & Equipment Company are located at Columbus, Ohio. Division offices are maintained at New York, Pittsburgh, Marietta, Wichita, Tulsa, Fort Worth, Houston, Beaumont, Shreveport and Los Angeles, with branches and stocks in every important oil and gas field. Foreign offices are maintained in London, Buenos Aires and Maracaibo. Export offices are located in New York, Columbus, Houston and Los Angeles with representatives in most important foreign cities.



Leidecker Tool Company plant, Marietta, Ohio

Manufacturer and Supply Dealer Notes



Hercules Motors Corporation, Canton, Ohio, has enlarged its manufacturing facilities twice during the past year, adding 75,000 square feet of roofed-over floor space. The accompanying illustration shows space for additional dynamometer equipment of the latest type provided in the recently enlarged Hercules plant. Each engine receives a test equal to a laboratory test before being shipped.

L. F. Baash, president of the Baash Ross Tool Company of Los Angeles, left this week on a trip that will take him to all of the major fields in Texas, Oklahoma, Kansas, Lower Michigan, Canada, Montana, and Wyoming, before he returns to Los Angeles in July. Baash will confer with the district salesmen in all of the territories in order to get first-hand information of the recent new developments in the oil fields for his company's future sales and engineering work.

On the first leg of his trip Baash will cover Texas and Oklahoma, and on June 1 will be accompanied by H. H. Clark, vice president and sales manager, through Michigan, Canada, Wyoming and Montana.

Baash and Clark will return to Los Angeles in July after covering several thousand miles on this trip and will have visited with every salesman of Baash Ross Tool Company serving every oil field in the country.

The R. Y. Ferner Company, exclusive representatives in the United States and Canada for Chevenard dilatometers and industrial thermic analysers with headquarters in the Investment building, Washington, D. C., has published Catalog D-1, a 16-page layout covering the design, construction and operation of these products. It is available upon request to the company.

Louis Brown, 68, former president of Oil Well Supply Company and retired chairman of the board of directors, died of pneumonia, in Pittsburgh May 2.

Mr. Brown, who served Oil Well Supply Company as president for 17 years, resigned as chairman of the board of directors January 1, 1929. His career in the oil field equipment dates back to 1889, when he joined National Tube Works Company as assistant manager of their Pittsburgh office. In 1891 he joined Oil Well Supply Company as assistant treasurer. In 1911 he succeeded John Eaton as president of the company upon the latter's death.

Hughes Tool Company has just published a new price list, effective April 15, 1930, covering Hughes drilling valves, manifold valves and fittings, of heat treated cast chrome nickel steel. These prices include freight prepaid to any point in the United States, and a copy of the list is available upon request to the main office and plant, Houston.

MacClatchie Manufacturing Company, Compton, California, is adding more than 1000 square feet of floor space to its assembly plant, which represents the fourth expansion program within the last year. The most modern equipment is being installed upon completion of this expansion. Plans are now under way for further expansion of the aircraft engine division of the company, manufacturer of the MacClatchie "Panther," an L-head radial aviation engine.

Lon R. Smith has been appointed assistant director of sales for Hercules Motors Corporation, Canton, Ohio, builders of four and six cylinder heavy duty engines. His new duties will include supervision of export sales and sales promotion among company distributors.

The plant of the H. C. Smith Manufacturing Company at Los Nietos, California, is among the most modernly equipped plants of its kind in the country, and its engineering department is constantly working on new equipment for improving and perfecting the company's line of drilling, coring and underreaming tools.

The latest product of the H. C. Smith Company, the Type "F" rock core bit for hard formations, is the result of much research work on the part of staff engineers and, in addition to the regular plant equipment, necessitated the installation of special machinery and equipment. Both of the machines shown in the accompanying illustrations are used in machining the Type "F" rock core bit. The marvel metal band saw does fast and smooth finish, comparable to semi-finished work of a milling machine. It weighs 2000 pounds complete, and its capacity is 18 inch by 18 inch. It is possible to tip 45 degrees either to the right or left and saw any set up work. The Cincinnati Bickford radial drill press is the latest type machine with precision and accuracy of work and full centralized control. This machine has a 11-inch column and four-fast arms.

The C. J. Tagliabue Manufacturing Company, Brooklyn, New York, will move about July 1 from its old location at Bush Terminal to the new quarters, shown here, located at Park Avenue, extending from Nostrand Avenue to Sanford Street.

This move represents an expansion of more than double the present facilities in manufacturing and distributing. The new building provides approximately 300,000 square feet of working floor space. Near the executive offices on the third floor is provided a large reception room and show room where the company's products will be on display. A completely equipped hospital is to be conveniently located on the first floor, easily accessible to the entire plant.

The C. J. Tagliabue Manufacturing Company manufactures a line of instruments, including indicating, recording and controlling instruments for temperature, pressure, humidity, time, condensation and liquid level, laboratory and industrial thermometers, hydrometers and oil testing instruments.

Manufacturer and Supply Dealer Notes

$3,000,000 MERGER OF PROMINENT OIL TOOL COMPANIES

Formation of Globe Oil Tools Company, a new $3,000,000 California holding corporation, has just been effected through a consolidation of three of the leading oil tool manufacturing concerns on the Pacific Coast.

The merged companies are the H. C. Smith Manufacturing Company of Los Nietos; Weimann-Kammerer-Wright Company, Inc., of Hollydale, and National Tool & Metals, Inc., of Torrance.

According to J. C. Wright, president and general manager of the new concern, all outstanding stocks of the constituent companies will be held by the new holding company, and eventually retired. Plans are to eventually locate all three concerns at Los Nietos, on the property now occupied by the new modern plant recently constructed by H. C. Smith Manufacturing Company.

Globe Oil Tools Company has an authorized capital of 500,000 capital shares of no-par value, and on the basis of the exchange of stock by which the consolidation has been effected, the stock has an indicated value of $10 a share. The company has been permitted to issue 300,000 shares, 280,000 of which are being exchanged for stock of the merged companies. The remaining 20,000 are to be issued from time to time as conditions warrant.

Officers of the new organization include: J. C. Wright, president and general manager; M. G. Brumley, vice president and general sales manager; Edgar H. Wilson, vice president and assistant sales manager, and J. S. A. Smith, secretary-treasurer. The board of directors, in addition to the above named officers, include: H. C. Smith, president of the H. C. Smith Manufacturing Company; E. M. Smith, president of Emsco Derrick and affiliated companies, and W. A. Trout, vice president and general manager of Emsco Derrick & Equipment Company.

In addition to California, all three constituent companies are operating in the Mid-Continent fields from their branch at Oklahoma City, and anticipate a considerable expansion in that field in the near future.

C. D. McCormick, formerly assistant advertising manager of The C. F. Pease Company, 813 North Franklin Street, Chicago, manufacturers of blue-printing machinery, blue-print paper, drafting room furniture, etc., has been appointed advertising manager to succeed W. Earle Pashley, now second vice president and assistant sales manager. McCormick has been with the company for more than four years, and was previously connected with Illinois Glass Company, Alton, Illinois.

Turbo-Mixer Corporation, New York, manufacturers of agitating and allied equipment, announce the appointment of J. E. Moul as general manager. Moul's previous connection was that of president and general manager of Gifford-Wood Construction Company, New York City.

Plants in merger of Globe Tools Company, and officers of company: Reading from left to right—Mr. M. G. Brumley, vice-president and general sales manager; Mr. J. C. Wright, president and general manager; Mr. Edgar H. Wilson, vice-president and assistant sales manager

They had to use

Quasi-Arc Electrodes

For Better Welds

A PROMINENT manufacturer wrote:—"Our reason for using Quasi-Arc on certain parts of our product is because these parts are subject to vibration and bumping."

"Our investigation has shown that a weld made with Quasi-Arc rods can be bent, twisted or forged *without cracking* whereas welds made with ordinary rods cannot be so treated, Quasi-Arc products making more ductile welds."

That is why leading manufacturers are using Quasi-Arc electrodes exclusively in the manufacture of their products.

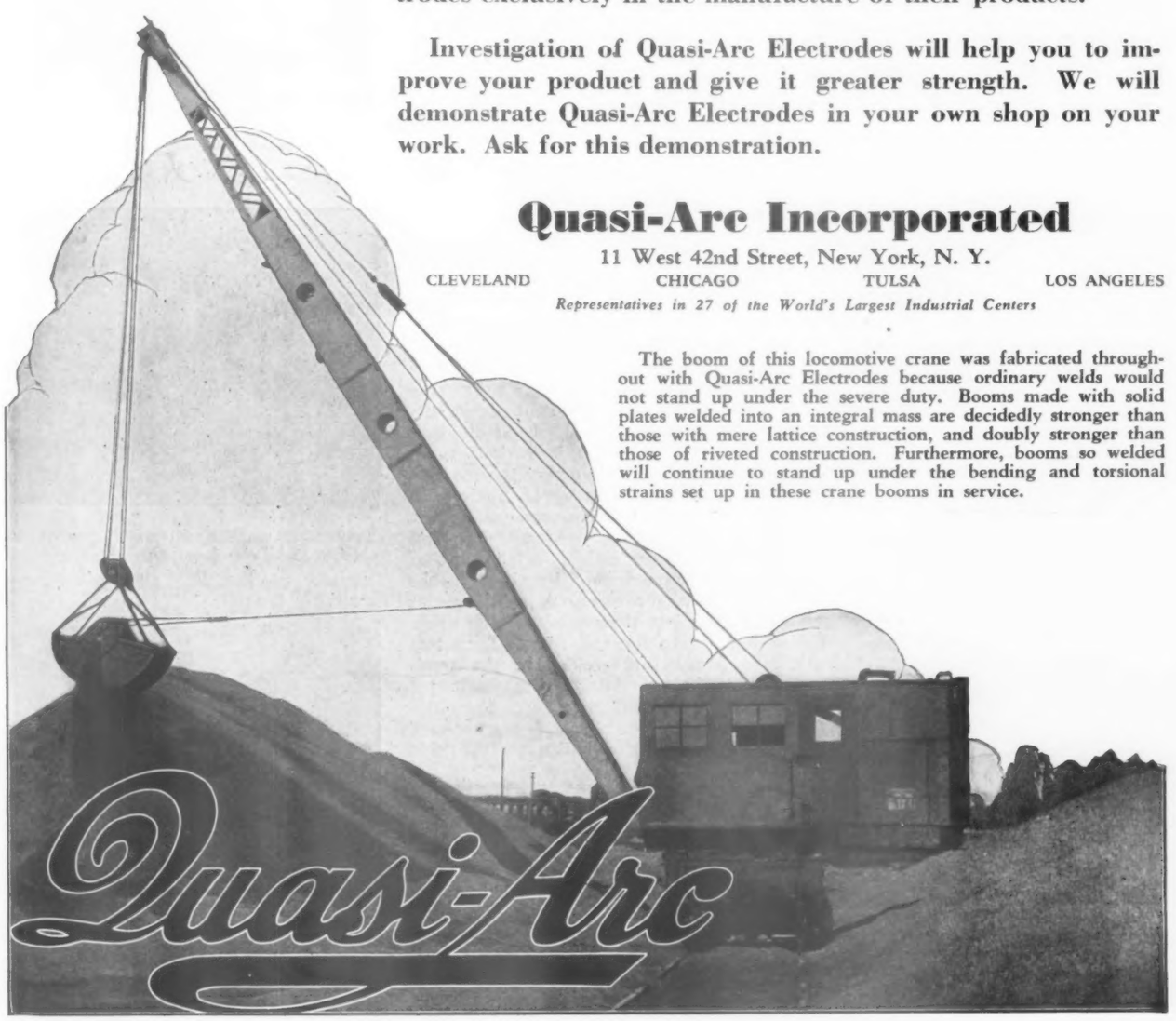
Investigation of Quasi-Arc Electrodes will help you to improve your product and give it greater strength. We will demonstrate Quasi-Arc Electrodes in your own shop on your work. Ask for this demonstration.

Quasi-Arc Incorporated

11 West 42nd Street, New York, N. Y.

CLEVELAND CHICAGO TULSA LOS ANGELES

Representatives in 27 of the World's Largest Industrial Centers



The boom of this locomotive crane was fabricated throughout with Quasi-Arc Electrodes because ordinary welds would not stand up under the severe duty. Booms made with solid plates welded into an integral mass are decidedly stronger than those with mere lattice construction, and doubly stronger than those of riveted construction. Furthermore, booms so welded will continue to stand up under the bending and torsional strains set up in these crane booms in service.

Manufacturer and Supply Dealer Notes

$3,000,000 MERGER OF PROMINENT OIL TOOL COMPANIES

Formation of Globe Oil Tools Company, a new $3,000,000 California holding corporation, has just been effected through a consolidation of three of the leading oil tool manufacturing concerns on the Pacific Coast.

The merged companies are the H. C. Smith Manufacturing Company of Los Nietos; Weimann-Kammerer-Wright Company, Inc., of Hollydale, and National Tool & Metals, Inc., of Torrance.

According to J. C. Wright, president and general manager of the new concern, all outstanding stocks of the constituent companies will be held by the new holding company, and eventually retired. Plans are to eventually locate all three concerns at Los Nietos, on the property now occupied by the new modern plant recently constructed by H. C. Smith Manufacturing Company.

Globe Oil Tools Company has an authorized capital of 500,000 capital shares of no-par value, and on the basis of the exchange of stock by which the consolidation has been effected, the stock has an indicated value of $10 a share. The company has been permitted to issue 300,000 shares, 280,000 of which are being exchanged for stock of the merged companies. The remaining 20,000 are to be issued from time to time as conditions warrant.

Officers of the new organization include: J. C. Wright, president and general manager; M. G. Brumley, vice president and general sales manager; Edgar H. Wilson, vice president and assistant sales manager, and J. S. A. Smith, secretary-treasurer. The board of directors, in addition to the above named officers, include: H. C. Smith, president of the H. C. Smith Manufacturing Company; E. M. Smith, president of Emsco Derrick and affiliated companies, and W. A. Trout, vice president and general manager of Emsco Derrick & Equipment Company.

In addition to California, all three constituent companies are operating in the Mid-Continent fields from their branch at Oklahoma City, and anticipate a considerable expansion in that field in the near future.

C. D. McCormick, formerly assistant advertising manager of The C. F. Pease Company, 813 North Franklin Street, Chicago, manufacturers of blue-printing machinery, blue-print paper, drafting room furniture, etc., has been appointed advertising manager to succeed W. Earle Pashley, now second vice president and assistant sales manager. McCormick has been with the company for more than four years, and was previously connected with Illinois Glass Company, Alton, Illinois.

Turbo-Mixer Corporation, New York, manufacturers of agitating and allied equipment, announce the appointment of J. E. Moul as general manager. Moul's previous connection was that of president and general manager of Gifford-Wood Construction Company, New York City.

Plants in merger of Globe Tools Company, and officers of company: Reading from left to right—Mr. M. G. Brumley, vice-president and general sales manager; Mr. J. C. Wright, president and general manager; Mr. Edgar H. Wilson, vice-president and assistant sales manager

They had to use

Quasi-Arc Electrodes

For Better Welds

A PROMINENT manufacturer wrote:—"Our reason for using Quasi-Arc on certain parts of our product is because these parts are subject to vibration and bumping."

"Our investigation has shown that a weld made with Quasi-Arc rods can be bent, twisted or forged *without cracking* whereas welds made with ordinary rods cannot be so treated, Quasi-Arc products making more ductile welds."

That is why leading manufacturers are using Quasi-Arc electrodes exclusively in the manufacture of their products.

Investigation of Quasi-Arc Electrodes will help you to improve your product and give it greater strength. We will demonstrate Quasi-Arc Electrodes in your own shop on your work. Ask for this demonstration.

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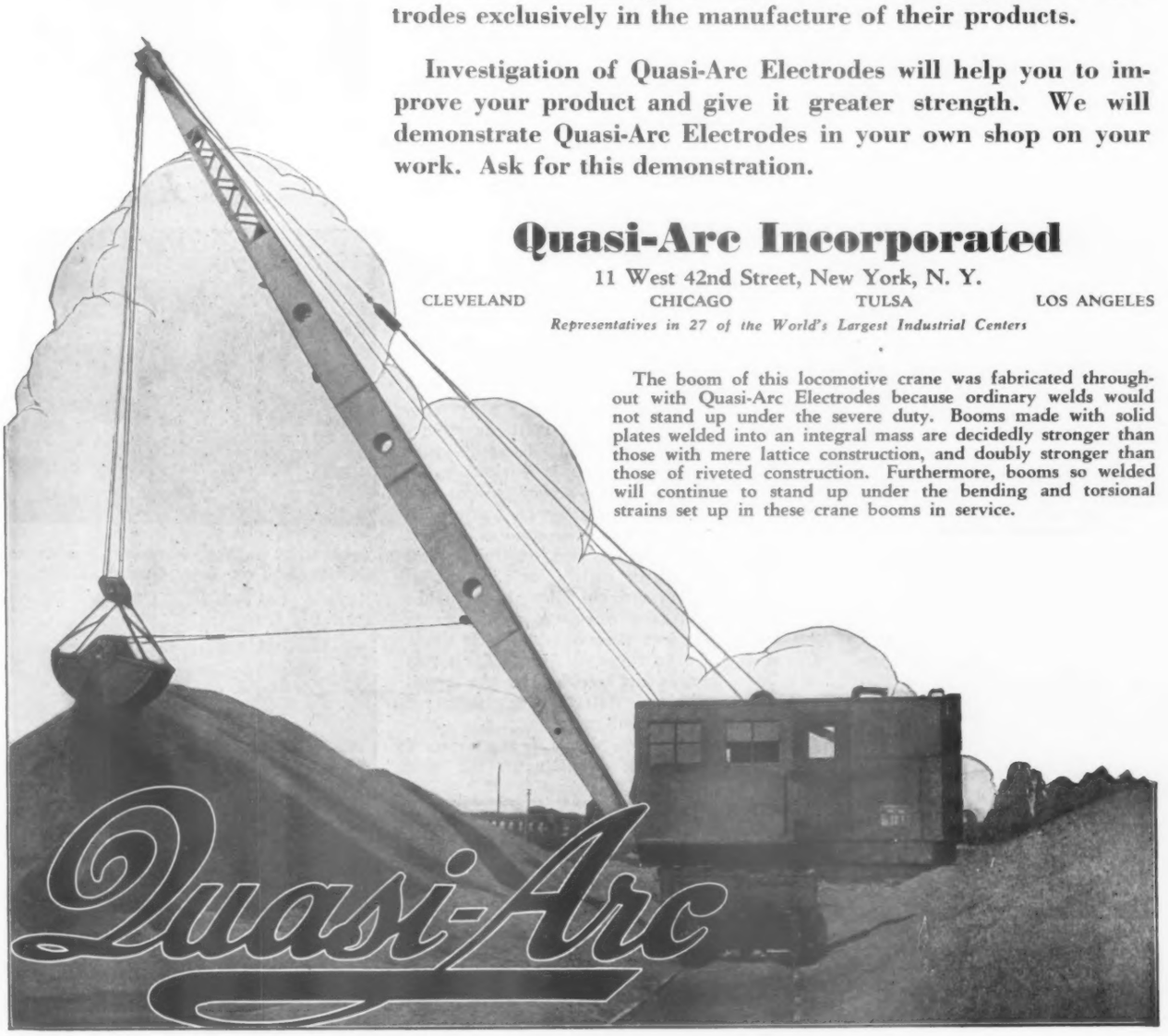

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Manufacturer and Supply Dealer Notes

Gas Furnaces Used in Rolling and Forming Pipe Couplings

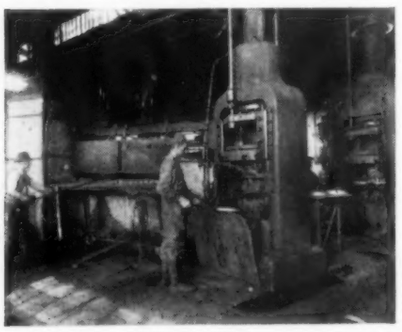
SINCE 1880, when Solomon R. Dresser first designed a pipe that was flexible, and easily assembled, and gave due consideration to proper joint, S. R. Dresser Manufacturing Company, Bradford, Pennsylvania, has grown to become the largest steel plant in the world devoted exclusively to the manufacture of pipe couplings and accessories for the construction and operation of pipe lines and gas mains, it is set forth in a paper, "Gas Furnaces Used in Rolling and Forming Pipe Couplings," by J. B. Nealy, the American Gas Association, in which the complete manufacturing process as practiced by the Dresser Manufacturing Company is described in detail.

The plant is operated with the unit system of production so that there may be long and uninterrupted runs of a number of different sizes of couplings, rings, or whatever part of the pipe is being produced.

The steel middle rings are made and then stretched to the sizes when cold. The skelp is sheared to length and both ends of each piece are turned up at a single angle. Next the bead formed in this operation is chipped off by an operator with a pneumatic hammer while being held in a hydraulic press. The next operation consists of rolling heat, a set of rolls occupying a position between the discharge ends of the two furnaces and takes the output of both. There follows the welding process.

The pressed steel flange division contains a number of hydraulic presses varying in capacity from 125 to 425 tons. These are placed in groups with gas furnaces for heating the stock. One set-up starts with three gas furnaces heating stock for two presses.

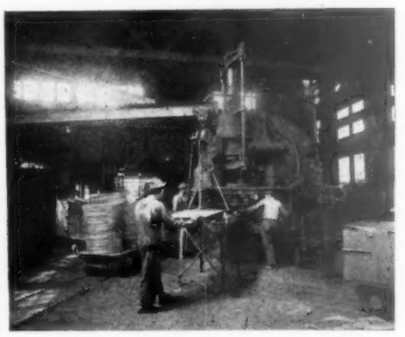
The company also manufactures in addition to couplings, many other specialties. There is the split sleeve department where welded steel split sleeves are produced in various types to enclose practically every type of pipe line joint. Sleeves may be made with specially forged semi-circular end rings, ranging in cross section from two inches by three inches for the smaller sizes to three inches by three inches for the larger ones. A semi-circular shell, not less than one-half-inch thick, is welded to the end rings. Then two side flanges are welded to the semi-circular halves. After facing, the halves are bolted together to form the complete sleeve. The sleeve then goes back to the welding department, the side bolts welded to the lower half. The last operation on the sleeve is the testing, when it is bolted up as it would be when put on the line; after which it is subjected to an hydrostatic test pressure of 400 pounds for a 250-pound working pressure sleeve to 600 pounds for a 400-pound working pressure sleeve.



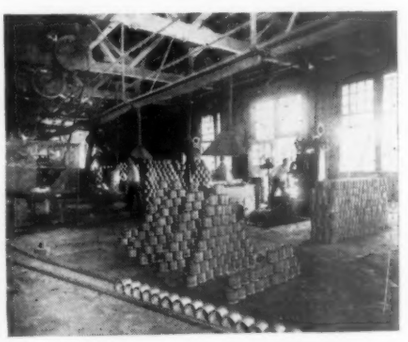
Presses in operation making small flanges. Note gas fired heating furnace

Blanking plate for flanges

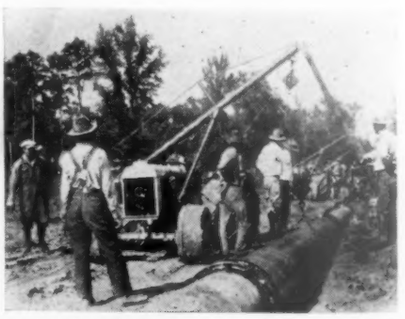
Mississippi River Fuel Corporation's 22-inch Dresser coupled natural gas line from Louisiana fields to St. Louis, more than 400 miles in length



Heating blanks in flange department in gas furnaces



Small section of hammer-weld department making small couplings. Gas furnaces used for heating steel



Dixie Gulf Gas Company's 20-inch high pressure Dresser coupled gas line from the Texas-Louisiana state line to Houston and Port Arthur, a length of about 300 miles

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Maracaibo, Venezuela & Pan American Airways, Inc., have announced the inauguration of weekly airmail and passenger service between Venezuela, South America, and the United States. The first official flight northbound started from Puerto Cabello, Venezuela, Tuesday, May 6, and from Maracaibo, Wednesday, May 7.

THERE are many reasons why oil men standardize on Cyclone Fence for enclosing refineries, tank farms, bulk stations and other oil property.

Cyclone Fence lasts many years because it is made of copper-steel heavily galvanized. Fabric is hot-dip galvanized by the "Galv-after" process developed by Cyclone. This process insures a smooth, dense coat of pure zinc. No chance for rust to start. Erected on H-column posts—the strongest and most durable posts made. Our own trained erection crews install Cyclone Fence everywhere. Write nearest offices for information.

All chain link fence is not Cyclone. This name plate identifies the genuine Cyclone Fence

CYCLONE FENCE COMPANY

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Works and Offices: Fort Worth.

Direct Factory Branches and Warehouses: Houston, Dallas, Tulsa.

Also Sales offices: New Orleans, Shreveport.

Cyclone Fence

REG. U.S. PAT. OFF.

(C) C. F. Co. 1930

B. B. Bros.

ALL STEEL HAND HOIST

TRADE MARK

SEATTLE, U.S.A.

Quick, Convenient Power in Small, Compact Weight

An indispensable piece of field equipment, say producers who use the B. B. Bros. Hand Hoist every day. It saves them time and money on emergency jobs of hoisting and pulling because it is portable and quickly set up. Weighs only 110 lbs. yet has tremendous power. Positive internal brake gives you absolute control.

"The Strongest Geared Power for its Weight in the World."

Weight 110 lbs.

Capacity FIVE TON STRAIGHT LINE

Size 16x17x13" High

Two Speeds 4 to 1 24 to 1

POSITIVE INTERNAL BRAKE

Construction Eight Pieces Electrical Steel Without Keys or Setscrews

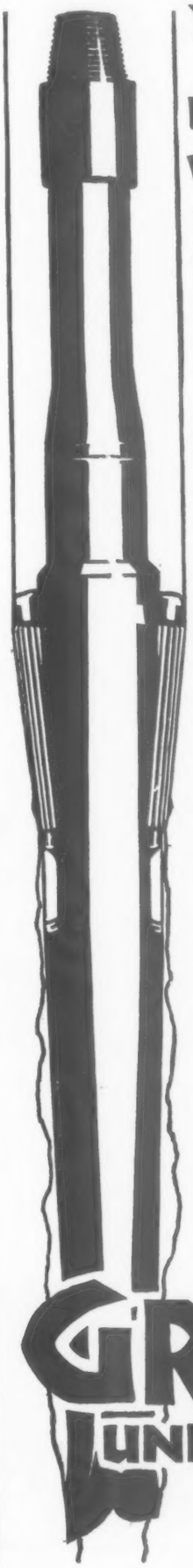
PRICE $80

Steel Tail Hold Yoke $4 Extra. Truck Attachment Plate Extra.

5 TONS Capacity

Sold by

THE NATIONAL SUPPLY COMPANIES



YOU CAN REAM AND UNDERREAM WITH THIS TOOL

Here's a two-purpose tool that saves you the price of an extra tool—the GRANT Rotary Expansion UNDERREAMER. It Reams and Underreams and does both better than any two tools on the market.

The Grant Underreamer gets *all the oil* there is. In *every* case, this tool has increased production from two to 10 times in wells where gas pressure is low, because it eliminates obstructions caused by circulation mud impregnated in the wall of the hole.

And don't overlook the Grant Cable Tool Underreamer—famous for fifteen years as the greatest tool of its kind and used in every oil field in the world.

Come to Underreamer Headquarters for everything in Underreaming. Full details on request.

Grant Oil Tool Co.

2042-44 East Vernon Avenue
LOS ANGELES, CALIFORNIA
U. S. A.

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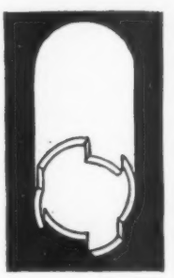
OIL WELL SUPPLY COMPANY
THE NATIONAL SUPPLY COMPANIES
CONTINENTAL SUPPLY COMPANY
THE REPUBLIC SUPPLY CO. OF CALIF.
LUCEY PRODUCTS CORPORATION

Simply insert the Cutter Control Sleeve shown at right when you want to convert the Grant Underreamer to a Straight Reamer. This Sleeve holds the cutters in collapsed position and assures a *fast* Reaming job that will true up the hole.



GRANT UNDERREAMERS

"Used where performance counts"

SQUEAKS FROM THE BULL WHEEL

"What is the most outstanding contribution that chemistry has given to the world?"

"Blondes."

Judge: "Well, here you are again, Rastus."

Rastus: "Yassah, boss, I'se back afore you again, but dis time ah has a cause."

Judge: "Well, what is it, Rastus?"

Rastus: "Judge, what would you do if someone steal you wife?"

Judge: "I'd cut her company, Rastus, and let it go at that."

Rastus: "Dat's jes' what ah did—and I cut him deep."

When Johnnie Ryan first became shop foreman the story is told how he had the reputation of being a "man of few words," so his first address to the fitters was as follows:

"Now men, you're all gonna work for me. I want you to know what is what. I can lick any man in the shop."

One big brawny chap stepped out and said, "You can't lick me."

Oh, can't I?" said Johnnie.

"No," said the man.

"Go to the office and get your pay. I will have no man that I can't lick working for me."

Worried Mother (as daughter opens front door at 3 a.m., year 1939): "Now, where in the world have you been at this hour?"

Daughter (slightly windblown): "Oh, Jim got fresh and my parachute got caught on a northbound mail plane."

Two Chicago motorists met recently in an alley that was too narrow to permit them to pass each other. One of the autoists, who was extremely high tempered, rose in his seat and shouted at the other one: "I never back up for any damn fool."

The other driver quietly put his car in reverse, backed out and replied, "That's all right. I always do."

A Justice of the Peace had a negro girl witness appearing in his court. The maid sat down. She crossed her legs.

"Pull down your dress," said the Judge.

"I can't, Judge; I dresses jes' lak white gals."

"You're fined five dollars for contempt of court," said the Judge. "Pay it to the clerk."

The maid went to the clerk and offered him five dollars.

"What's this for?" asked the clerk.

"For temptin' the jedge," said she.

APPLEMAN GUMBO BITS

Give Speed and Economy to Drilling

The remarkable speed **of this bit has made for it a reputation throughout the ranks of oil operators and drillers that singles it out as a leader** ***where time saved means dollars saved.***

Ask the man who uses them or write for information

B.K. APPLEMAN
BEAUMONT, TEXAS

An Irishman lay dying when the odor of cooking assailed his nostrils. Summoning his weeping daughter to his bedside, he said:

"Nora, darlin', ain't it biled ham that I smell?"

"Right for ye, faither," the girl replied.

"And would ye be asking your mither if I can have one before I die?"

The daughter delivered the message to mother in the kitchen and brought back this answer:

"Mither says ye cannot have any of the biled ham; it's fer the wake."

During the World War a very patriotic old lady was passing a farmer's barn one day and observed a young farmer boy milking a cow. He looked to be old enough to be in the army, and she was indignant to find him on the farm. He saw her, but didn't stop milking.

"Why are you not at the front?" asked the indignant patriot, and the quick reply was:

"Cause thar ain't no milk at thet end."

Paderewski was giving a private concert at the home of a young matron who had recently acquired great wealth, but whose knowledge of music was not equal to her money.

"May I ask, Mr. Paderewski," said the young woman, "who is the composer of that selection you played last? It is indeed wonderful."

"Beethoven, Madam," answered the pianist."

"Ah, yes," she replied. "Wonderful! Is he composing now."

"No, madam," replied Paderewski, gravely; "he is decomposing."

"My wife always gets historical when I stay out late at night."

"Hysterical, you mean."

"No, historical. She digs up all my past."

Bobby (in the presence of family and visitors)—No. I don't wanna kiss Miss Long—she slapped daddy for doing it.

"Is your husband much of a provider, Malindy?"

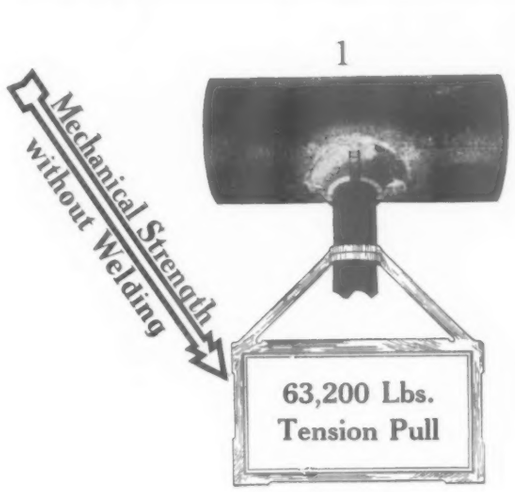
"He ain't nothing else, ma'am. He's gwine to get some new furniture, providin' he gets the money; he's gwine to get the money, providin' he goes to work; he's gwine to work, providin' the job suits him. I never see such a providin' man all mah days."

Jack was traveling with his mother on the train. Being witty and red headed, and his nationality obvious, he received a great deal of attention and kidding from the passengers. One man asked him:

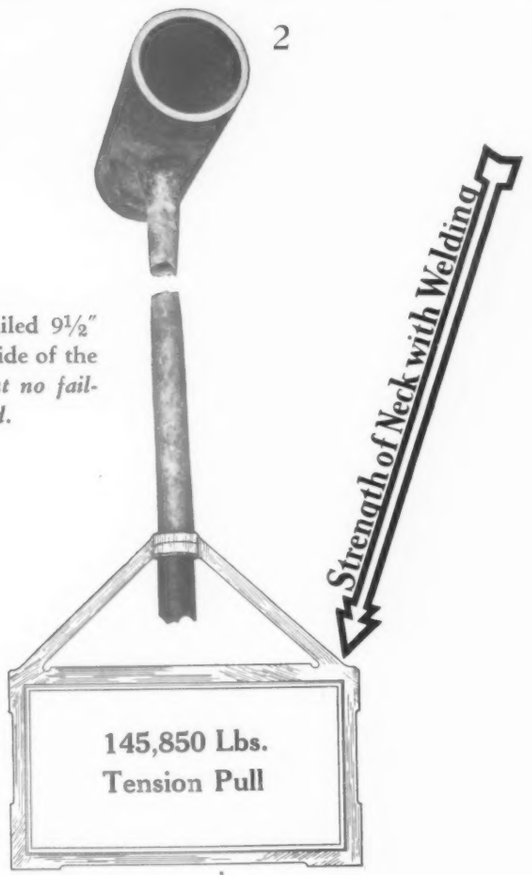
"Red, if you weren't Irish, what would you be?"

"I'd be ashamed."

Tests prove ATWOOD "Interlock" Neck "*Stronger* than the pipe itself"



. . . 3″ Pipe failed 9½″ beyond the outside of the 10″ pipe . . . *but no failure in the weld.*



TESTS recently conducted by the Pittsburgh Testing Laboratories to determine the mechanical strength (without welding) of the "Interlock" principle as well as the strength of the neck Oxyacetylene welded, conclusively prove the ATWOOD "Interlock" Welded Neck is actually "*stronger* than the pipe itself."

The ATWOOD "Interlock" Neck has been developed to meet the extreme conditions of modern high pressure lines. Its principle has been applied successfully to welded headers for every service condition . . . power plant, compressor station, refinery, river crossing, steamboat, and industrial piping generally where pressure and temperature are involved. Among the many hundreds of installations during twenty-two years . . . there *has not been a single failure.*

Report of Pittsburgh Testing Laboratory

Description of test . . . On top of a 500,000 pound test machine two saddles . . . cut, of course, to conform with its surface . . . were set on 13-3/16″ centers to support the 10″ pipe. The 3″ pipe was gripped by jaws in the lower head and tension applied.

Material . . . Seamless Steel Pipe in accordance with A.S.T.M. Specification A-106-29, Grade A. 10″ Pipe, 10¾″ O.D., .531 thick and 3″ Pipe 3½″ O.D., .312 thick.

Results . . . Specimen No. 1—"Interlock" Neck, no welding—Pipe failed at 63,200 pounds.

Speciment No. 2—With Oxyacetylene Weld—at load of 145,850 pounds, the 3″ pipe failed at a distance of 9½″ beyond the outside of the 10″ pipe. *No failure of the weld was noticeable.*

PITTSBURGH VALVE, FOUNDRY & CONSTRUCTION CO.
PITTSBURGH ~ PENNA.

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Boston, Mass.	185 Devonshire Street
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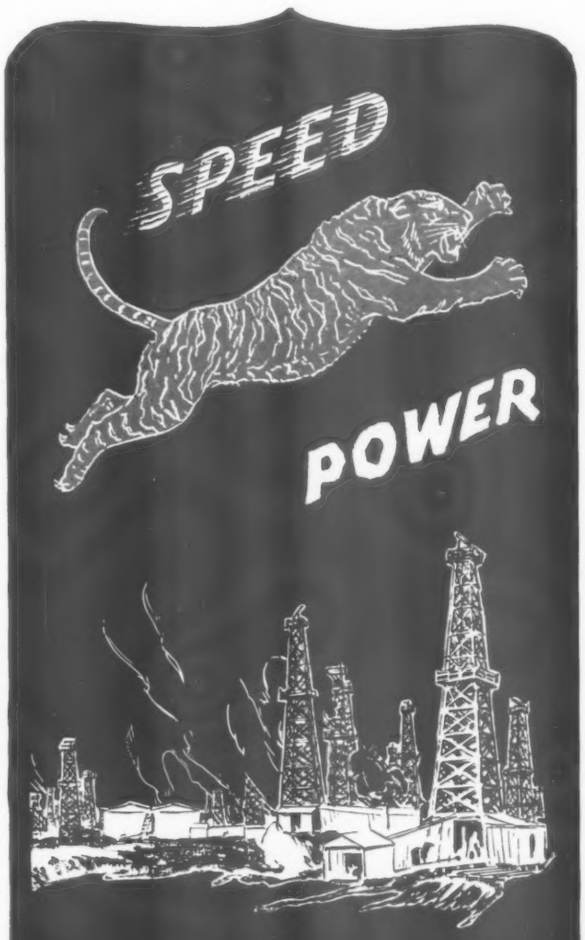

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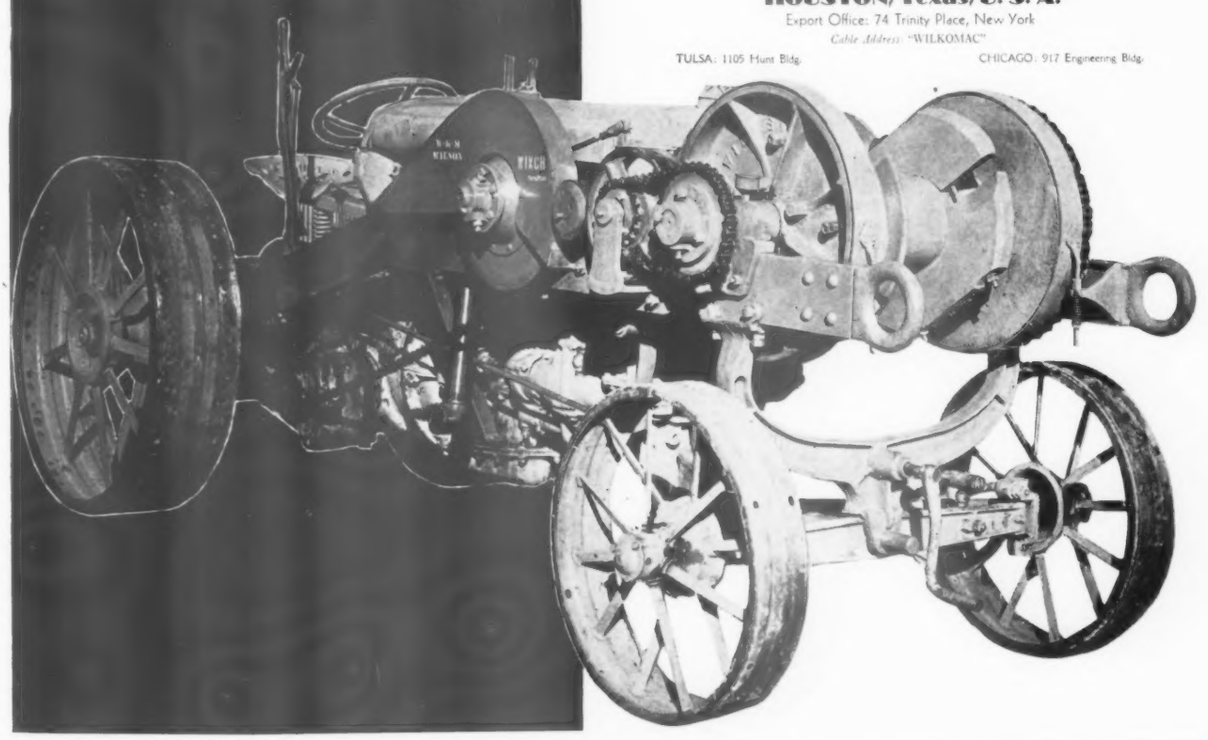

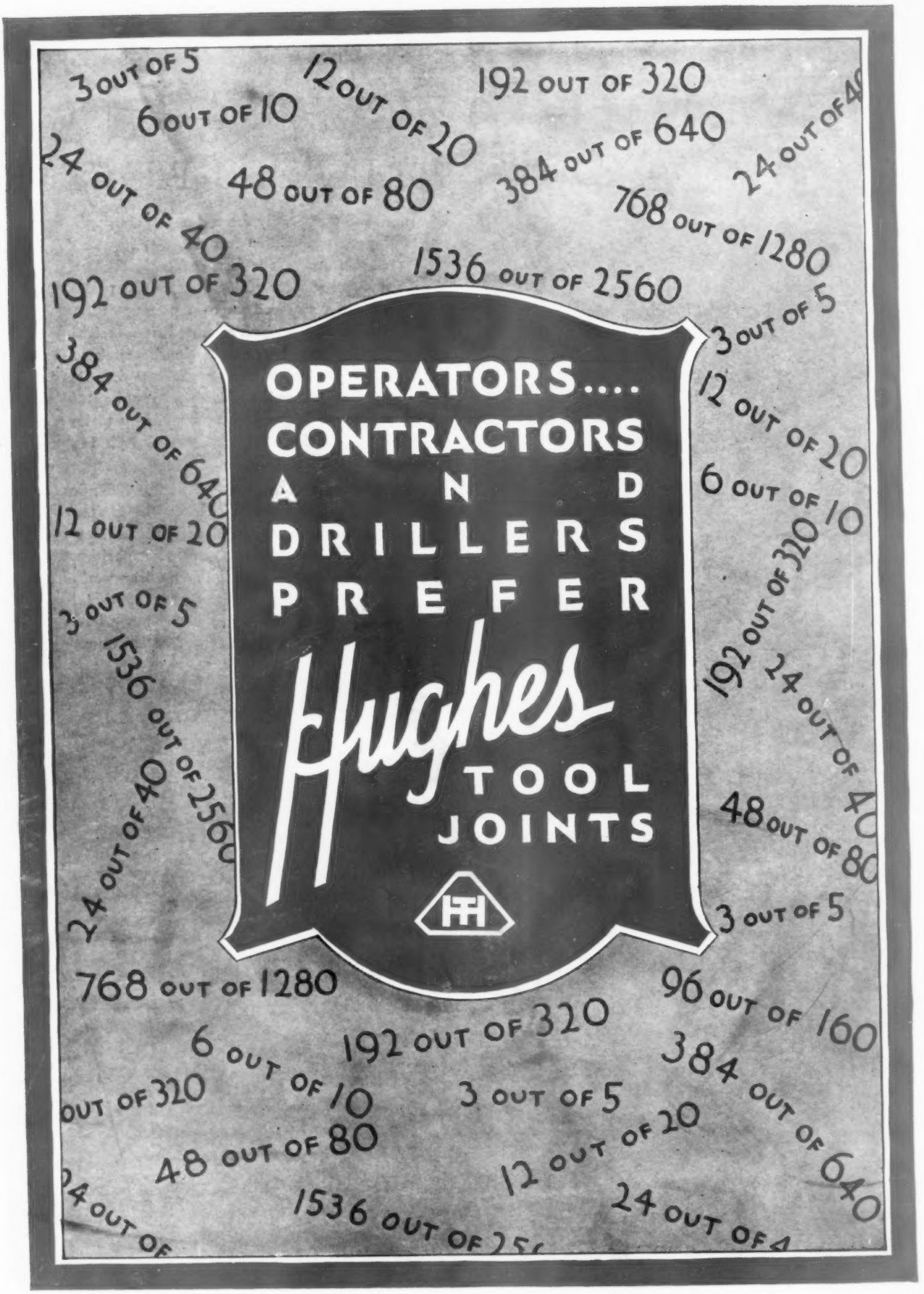
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